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CLEAN WATER FUNDING

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Clean Water Funding, Serial No. 103... THE
N ENVIRONMENT
AND NATURAL RESOURCES
OF THE

**COMMITTEE ON
MERCHANT MARINE AND FISHERIES
HOUSE OF REPRESENTATIVES**

ONE HUNDRED THIRD CONGRESS

FIRST SESSION

ON

**ACHIEVING THE OBJECTIVES OF THE CLEAN WATER
ACT**

FEBRUARY 18, 1993

Serial No. 103-1

Printed for the use of the Committee on Merchant Marine and Fisheries



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CLEAN WATER FUNDING

THURSDAY, FEBRUARY 18, 1993

HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES, COMMITTEE ON MERCHANT MARINE AND FISHERIES,

Washington, DC.

The subcommittee met, pursuant to call, at 10:10 a.m., in room 1334, Longworth House Office Building, Hon. Gerry Studds [chairman of the subcommittee] presiding.

Present: Representatives Studds, Pallone, Unsoeld, Reed, Furse, Hamburg, Lambert, Saxton, Ravenel, Gilchrest, Cunningham, Castle.

Staff Present: Leslie Grey, Will Stelle, Dan Ashe, Barbara Jeanne Polo, Sue Waldron, Gina DeFerrari, Marv Zeeb, Mary Kitsos, Robert Wharton, Cynthia Wilkinson, Lori Rosa, Jayneanne Rex, Laurel Bryant, Tom Melius, Judy Alvarez, Margherita Woods, Bill Wright.

STATEMENT OF HON. GERRY STUDDS, A U.S. REPRESENTATIVE FROM MASSACHUSETTS, AND CHAIRMAN, SUBCOMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

Mr. STUDDS. The subcommittee will come to order. We meet this morning to consider what is very aptly described as a crisis in clean water funding. As I am sure the witnesses will illustrate, our country today is about as far from achieving the objectives of the Federal Clean Water Act as we have ever been, and the reason, very simply put, is that we do not have the money to do the job.

Increasing our commitment to fund clean water infrastructure is the most important clean water issue facing the country. We can talk about controlling combined sewer overflows, polluted runoff, storm water, and toxics, but we will be simply talking unless we find the money to do the job. Our cities and towns and our individual ratepayers cannot shoulder this burden alone.

There is also the larger issue of affordable water and sewer services. Simply put, it is an issue that cuts to the core of what prosperity and economic development mean to municipal and family coffers across the nation. In my own district, which, unfortunately, is as telling an example of this as any, this year will mark the 8th anniversary of the Court-ordered Boston Harbor cleanup. I daresay there will not be any parades or celebrations to mark the occasion.

In the city of Quincy, from whose mayor we will hear in a moment, sewer and water rates have risen by more than 400 percent in the interim, and they are projected to double very shortly again. It now costs more to run the tap than it does to educate

your child or to keep the streets safe. We have one of the highest rates in the nation, and, as I said, they are about to double again.

What about economic development? The average industrial water and sewer bill in our region is \$694,000 per year. In other cities, which, for obvious reasons, I will not name at the moment, it is about a sixth of that. If you are going to start up a business, you have to be particularly attracted by the other advantages of a location to move in our direction. Affordable water and sewer services cut to the core of our prosperity; they are not a luxury.

We must face two unpleasant facts. The first is that the last 12 years have witnessed the essential bankrupting of the Federal Government, and the nation's cupboard is bare. We now have a President who told us he intended to do something about it, and I think we now know that he is very serious indeed. The second fact is that we must increase Federal funding for water services. The current situation is unacceptable, and it is getting rapidly worse.

These two stark realities led me three years ago to bring an effort to find new money for clean water because the only way we will increase Federal support is to identify a way and most likely a new way to pay for it. Hence, our proposal for an alternative financing mechanism that is founded on the polluter-pays principle which would generate some \$6 billion annually through a broadly based system of taxes on polluting industries and activities. No one wants to be taxed, and no one particularly wants to talk about this issue. There is, however, no alternative whatsoever other than living with highly polluted water, and that is no alternative.

It is time to face the facts and to get to work in solving an extraordinarily complex problem. I hope today's hearing will help us in that regard. Before going to our witnesses, I will recognize members if they wish, reminding them of them of the new rules of the committee which are hortatory in nature and which discourage the kind of statements I just gave. I think they except the Chair and the ranking member, however.

[Statement of Mr. Studds follows:]

STATEMENT OF HON. GERRY E. STUDDS, A U.S. REPRESENTATIVE FROM MASSACHUSETTS, AND CHAIRMAN, SUBCOMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

The Clinton infrastructure initiative presents an unprecedented opportunity to create millions of jobs, improve water services that are essential for long-term economic growth, and make huge improvements in environmental quality nationwide.

THE PROBLEM

Nationwide, water and sewer bills are skyrocketing, as the costs of municipal sewage plants soar. The Reagan/Bush policy of withdrawing Federal support for clean water is bankrupting household and municipal budgets. Consider these facts.

We have underinvested in clean water infrastructure. The Environmental Protection Agency (EPA) estimates that it will cost \$111.5 billion over the next 20 years to build the infrastructure needed to comply with *current* Federal standards for wastewater treatment alone.

At current rates of investment, we are falling further and further behind every year. A recent report issued by the National Utility Contractors Association found that the annual shortfall in Federal, state and local funding for wastewater infrastructure is as high as \$7.7 billion.

If the conviction is there, the jobs are there. In February 1992, the EPA estimated that there are \$12 billion in wastewater infrastructure projects which are "ready to go". More current estimates are now being prepared.

Drinking water requirements are also draining local coffers. "Ready-to-go" drinking water projects top \$14 billion—exceeding wastewater requirements.

THE SOLUTION

A FEDERAL INVESTMENT OF \$6 BILLION ANNUALLY IN PROTECTING WATER QUALITY TREATMENT IS REQUIRED

The clean water infrastructure initiative should pursue two tracks simultaneously to achieve this objective. First, it should have an immediate appropriation to jumpstart the clean water and drinking water program for jobs and productivity. Second, it should phase in a permanent solution to the clean water funding crisis.

THE SHORT TERM

The first year infrastructure proposal should serve as a bridge to the long-term solution by appropriating \$3.5 billion for clean water projects—making a total 1993 investment of \$6 billion.

THE LONG TERM

Accompanying the short-term stimulus package should be a long-term solution that phases in a self-financing mechanism and phases down the appropriation levels for deficit reduction purposes.

The long-term solution is comprised of two core elements:

A "polluter pay" proposal to raise new revenues; and

A substantial retooling of the existing state revolving fund system to encompass drinking water requirements and improve the SRF's ability to finance state and local clean water programs.

The heart of the proposal is the "Polluter Pays" principle, shifting a greater share of water treatment costs away from town and household coffers and onto the sources of pollution. At my request, the Congressional Research Service (CRS) has issued a detailed report on this major new source of clean water funding. Through a combination of revenue sources, this proposal would provide a large infusion of dollars into existing state revolving funds (SRF's) to finance state and local clean water projects.

REVENUES

A fee on the industrial discharge of toxic pollution—expected revenue: \$3.0 billion.

A fee on industrial, commercial, and consumer products that are known to contribute to water pollution—expected revenue: \$2.0 billion.

An excise tax on the active ingredients of pesticides and fertilizers—expected revenue: \$1.0 billion.

Total Annual Revenues: \$6.0 billion

DISBURSEMENTS

The National Clean Water Investment Corporation

Several principles should govern disbursements. Revenue should be dispersed through a National Clean Water Investment Corporation and channeled to state revolving loan funds (SRF's) that would be retooled to reflect the following:

Project Eligibilities. Project eligibilities would be expanded beyond sewer projects to include a broader array of clean water needs, including combined sewer overflow, stormwater controls, other capital costs associated with implementing state non-point source control programs, local drinking water requirements and other state and local clean water needs.

Broader Financing Tools. The State Revolving Funds (SRF's) must be revamped to authorize a broader array of financing tools, like zero and negative interest loans to help small and financially strapped communities (a negative interest loan is another form for a direct grant insofar as it buys down the outstanding principle of a loan);

Revise the Allocation Formula. The current Clean Water Act allocation formula must be revised to reflect actual state needs.

THE RETURN ON INVESTMENT

Jobs for the Environment. The National Utility Contractors Association estimates that every \$1 billion investment in water and sewer projects generates from 34,200 to 57,400 in jobs for American workers. Therefore, EPA's total 20-year need estimate represents as many as 6,402,060 American jobs. More importantly, the EPA estimate that there are \$12 billion in projects "ready to go" (completed design and engineering phases and ready to go to bid)—meaning that a short-term initiative in clean water investment will generate as many as 614,180 American jobs over the next six years.

Long Term Productivity Increases. Job creation is the most rapid and obvious benefit but this investment pays other dividends as well. A cleaner environment promotes health and safety and contributes to employee productivity; public investment in water treatment capacity is a demonstrated stimulus to private investment; a national polluter pays fee system will promote competitiveness by evening the economic playing field between states and cities and create market incentives for pollution reduction and innovative technologies.

The result is productivity, competitiveness, economic stimulus, jobs, and a cleaner environment.

Mr. STUDDS. Are there opening statements on this side? The gentleman from South Carolina.

Mr. RAVENEL. Mr. Chairman, I have no opening statement, but I have a statement here by Mr. Fields from Texas which I would like to enter into the record.

Mr. STUDDS. Without objection.

[Statement of Mr. Fields follows:]

STATEMENT OF HON. JACK FIELDS, A U.S. REPRESENTATIVE FROM TEXAS, AND RANKING MINORITY MEMBER, COMMITTEE ON MERCHANT MARINE AND FISHERIES

Mr. Chairman, it is a pleasure today to join you as the Subcommittee on Environment and Natural Resources considers national needs for funding clean water infrastructure projects.

Mr. Chairman, in my opinion, considerable progress has been made over the past two decades in meeting the ambitious and highly laudable goals set out in the Federal Clean Water Act and the Safe Drinking Water Act. Progress is not jeopardized by a lack of public concern for environmental or health issues; rather, lack of progress is due to a severe shortage of funds for the construction of clean water projects across our country.

The hearing today will provide an opportunity to receive testimony from the Environmental Protection Agency, State water pollution control administrators, and representatives of water utilities, to identify long-term national needs for clean water financing. This need can be translated into billions of dollars in capital investment. This investment is crucial to the protection of environment, fisheries, and wildlife. It is also necessary to support a growing and sustainable economy.

I look forward to the testimony that we will receive today for it will help assess the need for more Federal funding and explore ways to generate additional dollars to meet those needs.

Thank you, Mr. Chairman.

Mr. RAVENEL. Also one by Mr. Saxton. I would like to say on behalf of Mr. Saxton that he will be here a little later, that he wanted me to welcome Mr. Dennis Hart of the New Jersey Department of Environmental Protection and Energy. Thanks for coming today, and we look forward to your testimony. Thank you, Mr. Chairman.

Mr. STUDDS. Thank you, sir.

[Statement of Mr. Saxton follows:]

STATEMENT OF HON. H. JAMES SAXTON, A U.S. REPRESENTATIVE FROM NEW JERSEY

I would like to welcome Mr. Dennis Hart of the New Jersey Department of Environmental Protection and Energy. Thank you for coming today. I look forward to

hearing your testimony and guidance as we take up the important issue of Clean Water Act funding.

Although the success of the Clean Water Act in addressing industrial pollution is notable, the more ambiguous and entrenched sources of pollution may prove far more difficult to eradicate.

As has been stated, the funding requirements for addressing the needs of clean water projects, filtration facilities, combined sewer overflows and abatement of non-point sources are ominous—ranging in the hundreds of billions in current dollars.

At the same time, the budgets of Federal and State agencies have been stretched to cover more and more programs—leaving little funding for completing clean water mandates without re-prioritizing public dollars toward this national concern.

The option of doing nothing, however, is not an option. Natural resources dependent on critical wetlands and estuaries continue to degrade. The antiquated relics of combined sewer overflows continue to poison our coastal waters. Local economies dependent on industries such as fisheries and tourism are increasingly threatened by poor water quality. And the lack of municipal infrastructure may be stifling economic growth and job opportunities within our communities.

I look forward to receiving testimony from today's witnesses and hearing their advice as well as their concerns on these important issues.

Thank you, Mr. Chairman.

Mr. STUDDS. Are there additional opening statements? The gentlewoman from Oregon.

**STATEMENT OF HON. ELIZABETH FURSE, A U.S.
REPRESENTATIVE FROM OREGON**

Ms. FURSE. Mr. Chairman, as a member from the State of Oregon, I am especially pleased that you have chosen funding of clean water infrastructure as the first item on this agenda. In too many cases, the Federal Government mandates local action that states and local governments cannot afford. Both the Safe Drinking Water Act and the Clean Water Act are excellent examples of legislation with laudable aims but limited funds, and nothing is more important to our health, our safety, our economies, even our human existence than clean water. Yet clean water comes at a very high price.

During the '90's, Oregon communities will need to spend \$240 million to meet safe drinking water standards. And our communities like Cannon Beach and Seaside, the city of Portland are hard-pressed to meet their commitments. Under the Clean Drinking Water Act, Oregon communities face additional challenges, and I am very pleased that the new Administration is providing some hope that the challenges facing cities like McMinnville and Portland and St. Helens will be met.

Also, I am pleased that this Administration views clean water investments both as an economic stimulus because of the direct and indirect jobs created and as an investment because of the economic productivity induced by clean water projects. I am also pleased that you, Mr. Chairman, are examining creative alternatives to the funding of clean water in the hopes that we can address the clean water backlog that affects every American, and I really appreciate the witnesses who are here today and appreciate this opportunity, Mr. Chairman. Thank you.

Mr. STUDDS. I thank the gentlewoman. Are there additional statements on this side? The gentleman from Maryland.

**STATEMENT OF HON. WAYNE GILCHREST, A U.S.
REPRESENTATIVE FROM MARYLAND**

Mr. GILCHREST. Just very quickly, Mr. Chairman. I live in a fairly rural area that goes into a very urban area, a city to the country, and there are massive problems in both. I look forward to the testimony. There are communities in my district where every single septic tank is failing and leaching into the groundwater, and there is no hope at this point for any money to bring relief to that problem. And this is an economic problem; it is an infrastructure problem; it is a community problem that we all seriously need to address. And I look forward to the testimony.

Mr. STUDDS. The gentleman from one of the second most beautiful districts in the country. The gentleman from California.

**STATEMENT OF HON. DAN HAMBURG, A U.S. REPRESENTATIVE
FROM CALIFORNIA**

Mr. HAMBURG. Thank you. Good morning, Mr. Chairman, and colleagues. The needs of small and rural communities for a different kind of financial assistance to implement the Clean Water Act must be a constant focus in our considerations today and throughout the Act's reauthorization.

Nationwide and particularly in the First District of California, small rural communities are simply unable to muster the financial resources to build treatment facilities. These facilities are necessary due to the standards of cleanliness established in the Act, and my communities and my districts simply do not have the financial resources to meet those obligations.

Rural small communities represent the largest group not yet in compliance with the requirements of the Act. 80 percent of those who missed the EPA's 1988 deadline for secondary treatment were small cities. This is understandable. The cost to comply is simply prohibitive when that cost must be borne without assistance particularly by communities with limited tax bases.

Our nation's water truly is a collective resource. Neither groundwater nor surface water stops at municipal boundaries. We must develop revenue sources to share the need to improve and maintain its cleanliness where local resources are inadequate. The state revolving funds' criteria and requirements overwhelm and defeat the efforts of many small communities like those in my district. The criteria are so daunting that project proposals are never even developed or submitted.

The prospect of generating matching funds and then facing long-term repayment obligations outweighs any short- or long-term promise of jobs or economic stimulus associated with the improvement of water treatment facilities. The President's stimulus package acknowledges the need for investment in wastewater treatment facilities, but the proposed level of funding will not begin to meet even our most immediate needs. If no additional Federal moneys are directed to the state revolving fund, as the President's proposal seems to indicate, the need for an alternative revenue source becomes more critical than ever.

Chairman Studds' revenue proposal to require the polluter to pay makes abundant good sense. The real cost of processes and

products which pollute the nation's waters must be borne by those who produce and use those products. I would urge development of the Chairman's revenue proposal both to generate the revenues necessary and to create positive incentives for reducing this problem.

Source reduction is a key component of a comprehensive plan for cleaning up our waters. Nonpoint pollution can be significantly decreased by alternative technologies that are in existence today. Forest management and agricultural productivity can be improved by practices which completely avoid the use of any toxins. Financial incentives to develop and implement these alternative approaches and technologies will result in immediate reduction of the toxics entering the water and reduce the need for expanding treatment capacities.

I look forward to development of positive alternatives for source reduction in the context of financial provisions which generate these necessary resources. We must build the systems needed throughout our country with new provisions to stimulate construction in our rural and small communities.

And, Mr. Chairman, I ask that I might be allowed to submit extended remarks which refer specifically to communities within my district which are very hard-pressed to meet the requirements of the Act.

Mr. STUDDS. Without objection. I thank the gentleman.
[Statement of Mr. Hamburg follows:]

STATEMENT OF HON. DAN HAMBURG, A U.S. REPRESENTATIVE FROM CALIFORNIA

The needs of small and rural communities for a different kind of financial assistance to implement the Clean Water Act must be a constant focus in our considerations today and throughout the Act's reauthorization.

Both nationwide and particularly in the First District of California, small rural communities are simply unable to muster the significant financial resources to build treatment facilities necessary to meet the standards of cleanliness established by the Act.

Rural small communities represent the largest group not yet in compliance with the Act. Eighty percent of those who missed EPA's 1988 deadline for secondary treatment were small cities. This is understandable: the cost to comply is simply prohibitive when that cost must be borne without assistance, particularly by communities with a limited tax base.

Our nation's water truly is a collective resource. Neither groundwater nor surface water stops at municipal boundaries. We must develop revenue sources to share the need to improve and maintain its cleanliness where local resources are inadequate.

The State revolving funds' criteria and requirements overwhelm and defeat the efforts of many small communities. The criteria are so daunting that project proposals are never developed or submitted.

The prospect of generating matching funds and then facing long term repayment obligations outweighs any short or long term promise of jobs or economic stimulus associated with improvement of waste water treatment facilities.

Examples of small communities hampered by the unavailability of funds to comply with the Act are abundant. In my District, there is one project which has been delayed by the unavailability of Federal funds which is now finally ready to proceed, but will do so at unbearable local cost unless Federal assistance can be secured.

The City of Napa and its small newly incorporated neighbor, American Canyon, have formed a joint powers authority to construct and operate a new facility. This will be the largest public works project ever built in this county. Without Federal assistance, the connection fees and rates in American Canyon, for instance, will increase 400%.

Over 20% of the residents of American Canyon live on fixed incomes and another significant portion are employees of the nearby naval shipyard currently being considered by the Base Closure Commission.

The project is an innovative model: it is designed to minimize energy consumption and to produce reusable waste water which will decrease reliance on other water sources. A portion of the reclaimed water will be used for a model wetland restoration project to enhance habitat for endangered species. This visionary treatment facility will be built but without Federal assistance, its costs are potentially devastating locally.

The President's stimulus package acknowledges the need for investment in wastewater treatment facilities, but the proposed level of funding will not begin to meet immediate needs. If no additional Federal monies are directed to the State revolving fund, as the President's proposal seems to indicate, the need for an alternative revenue source becomes more critical than ever.

Chairman Studds' revenue proposal to require the "polluter to pay" makes abundant good sense. The real cost of processes and products which pollute the Nation's waters must be borne by those who produce and use those products.

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Financial incentives to develop and implement these alternative approaches and technologies will result in immediate reduction of the toxics entering the water and reduce the need for expanding treatment capacities.

I look forward to development of positive incentives for source reduction in the context of financial provisions which generate necessary resources. We must build systems needed throughout the country with new provisions to stimulate construction in our rural and small communities.

Mr. STUDDS. The gentleman from California.

STATEMENT OF HON. DUKE CUNNINGHAM, A U.S. REPRESENTATIVE FROM CALIFORNIA

Mr. CUNNINGHAM. Thank you, Mr. Chairman, and I thank you for holding these hearings. You know, what a better time than if we are looking for change and to make sure that we care for our clean water. I speak not so much for myself because the main sewage issue in San Diego affects my old district in the inner part of San Diego.

The gentlelady from California, Lynn Schenk, who is a member of this committee, along with my other Democratic colleague, Bob Filner, feel a greater impact in their districts. But the EPA has mandated secondary sewage treatment that goes into the ocean where Scripps Oceanography, the Sierra Club, and other prominent environmentalists agree that it doesn't need to be done. But because of a ruling of the EPA, it could cost San Diego up to \$3 billion.

I would also like to work with you, Mr. Chairman, and Mr. Hamburg up north to ensure—one of the things that we have done at NAS Miramar is to make sure that all of the secondary flow-off of the runways at military airbases going into water storage areas are purified. We used to dump hydraulic fluid, fuel, other things out there, and it is my goal to make sure that every base in the State of California is an environmental sanctuary and a model for clean air and water.

Mr. STUDDS. Gentlemen, if there are no further questions, we will proceed. We have a panel of six witnesses. What we will do is ask you to make your presentations initially in their entirety. Then we

will go to questions. I suspect it has been explained to you by staff we have a cruel, brutal, totally arbitrary method of discouraging you from going beyond five minutes in your oral presentation.

Your full written testimony will appear in the record, and we are going to ask you to do your best to keep your oral summary of it to no more than five minutes. The little system of lights there—the yellow light will go on as a one-minute warning, and the red light will go on to let you gently know that you have completed your testimony.

It is always a special delight for any member of a committee to welcome one of their constituents; in this case, the mayor of my city of Quincy. The delight, however, is somewhat diminished by the poignancy of the reason for his being here which is as a representative of the city as affected by the subject of this hearing as any other.

Also, you should know that he is on his way from the snows of Massachusetts to a mayors' meeting someplace in the extreme south of Florida for reasons that are utterly unclear to some of us. Mayor Sheets, we welcome you again, and we are very happy to have you here. May your plane go south.

STATEMENT OF JAMES A. SHEETS, MAYOR, CITY OF QUINCY, MASSACHUSETTS

Mr. SHEETS. Thank you, Mr. Chairman. It is a pleasure for me to be here once again. And for the record, I am Mayor Jim Sheets from the city of Quincy. The city of Quincy, like 42 other cities and towns in the Commonwealth of Massachusetts, has been crowned by fate with the responsibility for paying for 92 percent of the cost of the cleanup of Boston Harbor. And I would just briefly like to indicate what that has meant and what it does mean and why we are so much committed to the reauthorization of the Clean Water Act as it has been proposed by this committee and also by the Congressman.

We live in the MWRA District. I have a few figures that I would like to present to you to give you some idea of where we have come from and where the cost is going. Between 1985 and 1992, the cost of cleaning up Boston Harbor for capital programs was \$1.2 billion. The operating cost in fiscal year '90 was \$180 million. Fiscal year '92, it went all the way up to \$347 million, nearly doubled in three years. The impact on rates jumped from \$180 per household in 1986 to \$587 in 1992, a 325 percent increase in six years. We move from 18th place to 1st place among major metropolitan areas, a decidedly unenviable honor for us to have.

What will happen between 1993 and 1999 if we are not given some relief? Capital outlay—we will put out \$4 billion more, and bear in mind that we are under Federal Court mandate to do this. We have no option. The operating budget in fiscal year '99 will be over \$800 million, and by 1999, the average household water and sewer bill in the city of Quincy in the metropolitan area will reach \$1,300 per year, almost two-and-one-half times the current cost at an increase of over 700 percent in 15 years. These rates, as you know, will exceed most people's heating bills even including the new tax and will be in the same range as their real estate taxes.

What is this going to mean to the Boston area and to its people, to my people in the city of Quincy? First of all, I can tell you it is going to foment a rebellion not only against these types of programs that I am testifying in favor of but environmental programs in general. Many people are already saying, "I would rather have a dirty Boston Harbor and be able to pay my tax bills or be able to buy food or be able to send my kids to college."

These are comments that are now common. They are now common. If this continues, it will require middle and lower-income families already hard-pressed to make further hard choices between paying their water and sewer bills and paying their utility bills.

For some, it will be the final straw in their consideration of relocation out of my city and out of the Boston area. These impacts apply to businesses and industry; perhaps even more in some ways than homeowners. These impacts apply to the entire range of people who live in a city like Quincy. And I can tell you from very personal experience that when my son chose to buy a home, he bought outside the MWRA District.

And when I asked him why, he said, "In five or six years, Dad, I will not be able to afford to pay the water and the sewer bills, so I am moving out." He said, "I can't carry all those burdens. I can't pay my \$400 a month on my college loans and at the same time—at the same time begin paying these huge MWRA charges."

In addition, those of us who are municipal leaders who are attempting to encourage the revitalization of our cities, whether it is in our neighborhoods or whether it is in our downtowns, find that our hands are being tied, and they are being tied because when I go out and I talk to retail people like Toys R Us and say, "I would like to have you locate in the downtown area of the city of Quincy," and we begin to look at the details, and they begin to look at the cost, I am going to tell you, if it is a choice of coming to my city and paying the water and sewer rates or going to somewhere down further on the south shore where they don't have the MWRA sewer rates, they are going down on the south shore.

So not only is it a question of whether or not the people who live in my city who raise their family in my city, who go to school in my city are going to be able to pay these bills, but it is a question as to whether or not we are going to be able to attract business to our city in the future. And if we cannot do that, then you will see an increased deterioration of the infrastructure of my city because we simply will not have the means whereby we can indeed progress to strengthen that infrastructure to attract good businesses and to keep good families, and that is what this is all about.

It is all about families. It is all about cities trying to survive in this economy, and I am fully in support, Mr. Congressman, of your proposal, and it is my hope that the legislature will act favorably on it, and, indeed, it will become law because I think an increase of a pool of \$6 billion a year that can be used to, indeed, help offset these increased costs is something that every household in all of America where we have these kinds of projects need to have at this time. And I see that the red light has gone on so I will stop at that point. Thank you, Mr. Chairman.

Mr. STUDDS. Thank you. The red light is also administered more flexibly when dealing with constituents.

Mr. SHEETS. I have three more pages here, Mr. Chairman. But I will tell you if you would give to me just a little more latitude, I would like to end with the story that I told sometime ago when I appeared before this committee.

Mr. STUDDS. Please.

Mr. SHEETS. And I understand there are two representatives on this committee from the State of Pennsylvania. There may be those who believe that this is just a metropolitan city problem. It is not. While I have lived 40 years in the great city of Quincy, I was born in the little coal town of Clarksville, Pennsylvania, in southwestern Pennsylvania. I happen to still own the coal patch house back there. Mom and Dad are dead; Dad died of the black lung disease.

But one of the greatest difficulties that my mother had in trying to end up her days in that little coal patch house, which I found out when she died it was worth about \$11,500, was that in order for her to continue living there, she had to pay what was new to her in the last two years of her life—a different kind of water and sewer bill because the Clean Water Act affects coal towns in Pennsylvania just like it affects cities like Quincy and Boston.

And where they had a septic tank and they had to join into a much broader system which allowed for the cleanup of the local rivers, I can tell you that when she died, she was paying in excess of \$400 a year in a water and sewer bill on a home that was worth \$11,500. Her taxes were less than \$400. And the total cost for her keeping that house was \$1,600 a year, \$400 of which was the sewer and water bill.

I say that because this is not just a problem for seacoast cities. It even affects little coal towns in states like Pennsylvania, and that is why your action is so terribly critical to all the people who live in this country. And thank you for the extra time, Mr. Chairman.

Mr. STUDDS. Thank you very much, sir. Next is Ms. Sonya Margerum who is the Mayor of West Lafayette, Indiana, and the Vice Chair of the relevant committee of the National League of Cities. Ms. Margerum, welcome.

STATEMENT OF SONYA MARGERUM, MAYOR, WEST LAFAYETTE, INDIANA, AND VICE CHAIR, NATIONAL LEAGUE OF CITIES EENR COMMITTEE

Ms. MARGERUM. Thank you.

Mr. STUDDS. Do you want to pull that mike up real close to you?

Ms. MARGERUM. Thank you, Mr. Chairman, and members of the committee. I am Sonya Margerum, Mayor of West Lafayette, Indiana, and Vice Chair of the National League of Cities Energy, Environment, and Natural Resources Committee. And I am here today to testify on behalf of the National League and the 16,000 cities and towns across the Nation that we represent on the critical municipal issue of financing for Federal environmental mandates and, in particular, the mandates that affect the nation's water and sewers.

And, Mr. Chairman, we would like to express our appreciation to you for your thoughtful efforts in devising an alternative financing

structure for the nation's water pollution needs. And we agree that the documented need to meet the Clean Water and Safe Drinking Water Act mandates will require a substantial and reliable long-term commitment.

And in large measure in response to your initiatives of the past several years brought to us by the former New Bedford Mayor, John Bullard, the National League of Cities has examined and developed policy addressing many of the ideas that you have put forward in your proposed National Clean Water Investment Corporation, and I would like to focus my remarks principally on what the nation's locally elected officials believe are the most appropriate and effective means to re-establish the Federal, state, local partnership in financing national goals and objectives. And my testimony will concern the types of funding, loans and grants, sources of revenue, and project eligibility.

The National League of Cities continues to support the State Revolving Loan Fund but as a supplement to, not a substitute for grant assistance. The SRF, as currently devised, is not a viable funding mechanism for many communities. A loan, by its very nature, is repayable and for some communities repayment is beyond their fiscal capacity, and I think we have heard testimony to that effect just now. And we believe it is important to note that the inability to repay loans is neither unique nor exclusive to small communities. Many of the nation's large and medium-sized cities face severe financial constraints, declining revenue bases, middle-class outmigration, and increased Federal intrusion in determinations about local financing priorities.

Other disincentives to use of the SRF are the myriad additional Federal requirements that adhere to the use of Federal funds, Davis-Bacon prevailing wage requirements being one of those. The National League believes that without grant assistance as part of the Federal commitment to helping meet the nation's environmental objectives, it is unlikely that municipalities will be able to comply with these mandates.

The National League of Cities policy calls on Congress to restore grant funding to assist municipalities in progressing toward meeting the nation's clean water goals. Cities should be eligible for grant or loan funds or any combination of loans or grants, and these should be tailored to the specific needs and capacity of each municipal applicant for Federal assistance. And we think that the funding allocation should take into account not only the municipality's ability to finance projects but also pass local efforts to address the problem. The only constraint on these funds would be to prohibit the use of grant funds to repay loans from the SRF.

Many municipalities are seeking innovative ways to comply with Federal environmental mandates, and we have begun to focus our attention on sources of pollution. NLC officials have approved policy calling for economic incentives and cost internalization. And we believe that the external, including social and environmental, costs of products should be attached to the product price as a means of curbing both point and nonpoint source pollution which is a problem in an agricultural state like Indiana.

In your proposal to levy fees and impose excise taxes on products that contribute to pollution is long overdue, and it has our support.

Your proposal to impose fees on toxic industrial discharges does cause municipalities some concern because we feel this is a source of local issues. But we do support expanding the activities eligible for Federal assistance under the Clean Water Act, and we have not addressed the question of using SRF dollars for the Safe Drinking Water Act purposes because we do not have a position on that. But we do point to this beginning and would like to have that considered later.

Do we need assistance? Yes, we do. Cities and towns are doing their very best to meet these requirements. My own city of West Lafayette has just approved rate increases of 37 percent, not quite as dramatic as Quincy and some of the others, but we tonight are holding a hearing on State Revolving Loan Funds, but we still have many issues to address—combined sewer overflows, rehabilitation, and loans for our plant.

So what we are asking is we are willing to implement it. We are the ones who will be able to have projects ready to go, and if you can provide for us the funding as well as the mandates and the regulation, we feel that we can begin to get this job done. Mr. Chairman, thank you for this opportunity, and I will be pleased to answer any questions.

[Statement of Ms. Margerum may be found at end of hearing.]

Mr. STUDDS. Thank you very much, Ms. Margerum. Next, Mr. Don Ostler, President of the Association of State and Interstate Water Pollution Control Administrators. That is an absolutely impossible acronym. Welcome.

STATEMENT OF DON OSTLER, PRESIDENT, ASSOCIATION OF STATE AND INTERSTATE WATER POLLUTION CONTROL ADMINISTRATORS

Mr. OSTLER. Thank you, Mr. Chairman, and good morning. It is our pleasure to be here to discuss with you critical clean water funding issues. My name again is Don Ostler. I am the Director of the Utah Division of Water Quality with the Department of Environmental Quality. This year I am the President of the National Association of State and Interstate Water Pollution Control Administrators which we affectionately shortened to ASIWPCA for obvious reasons.

Mr. STUDDS. Very good.

Mr. OSTLER. We have provided you with written testimony. I desire to address the four specific comments that you suggested that I cover in this presentation. My comments will be prefaced with the following five principles: We believe that the Clean Water Act is fundamentally sound. It is in need of fine-tuning. It does need additional funding, and there is a need for additional time in order to meet all the requirements. We believe the states must continue in a leadership role in developing management initiatives with regards to the Clean Water Act.

We believe that new Federal mandates must come to the states with increased flexibility and with adequate funding. We believe that we must have the flexibility to use our resources more efficiently, and we believe that there is a need to define the Federal role in funding infrastructure after 1994.

With that regard, I would like to address your specific questions of the short- and long-term needs as the states see it. With regard to the short-term needs, the states have recently done a survey of clean water and wastewater project needs. I have estimated that there are \$10 billion in projects that are ready to proceed very quickly if funding were available.

With regards to the long-term needs, the states and EPA have estimated that the needs for wastewater treatment in the United States is approximately \$130 billion. We believe if you add the new requirements from the 1987 Clean Water Act, that figure approaches \$200 billion substantial need.

Third, we believe that hardship needs for small communities are not now being adequately addressed due to their inability to pay. In my state, nearly two-thirds of the communities are small, and many of them have failing septic tanks as described by a previous committee member.

Fourth, we have seen sewer bills rise in many communities across the United States as a result of the phase-out of grant programs and the conversion to alternate funding systems.

Fifth, ASIWPCA does support a \$5 billion appropriation to meet both the old and the new needs of the Clean Water Act.

The second issue is how would funding affect jobs. We are not experts on jobs within ASIWPCA, but there have been estimates of between 30 and 60,000 jobs could be created with each \$1 billion of funding provided. One thing we do know is that the State Revolving Fund can get the money out faster. It is about 50 percent faster than the Construction Grant program was. The majority of the money goes out to local governments, and quite a bit of that money is leveraged so that the jobs created may be two to five times more than that above. We also believe that there are those \$10 billion worth of projects that are ready to proceed.

What is the best method to provide the funding? The states believe that funding should be provided through the State Revolving Fund and not through an additional new grant program. We believe that grants will undermine the existing State Revolving Funds that all of the states have been successful in creating.

We believe that grants will reward people who have not complied and decided to wait. We believe that the grants will penalize those who have proceeded with alternate financing and found ways to get the job done.

We also believe that the projects are there ready to proceed. We think there are some refinements needed in the State Revolving Fund requirements. These refinements are with regards to eliminating Title II requirements, possibly extending repayment periods to make it more affordable, and making land acquisition eligible for reimbursement. We also believe there is a means to provide funding assistance to small and hardshipped communities through the State Revolving Fund.

We think this should not be done through some provision of a principal subsidy which could be blended with the loan to make the projects affordable. However, it should be done through the current mechanism already established in the State Revolving Fund. We also think if you would like projects to be completed quicker you should consider elimination of the state match.

Finally, with regards to the proposal of a polluter pays fee: The states have not had adequate time to fully address the details of this proposal. But the states do recognize the needs for alternate funding mechanisms to fund clean water programs. These mechanisms need to be available not just to fund construction but also to fund state administration of those programs. The current \$300 million appropriation for state management of the clean water programs is inadequate. It needs to be increased to about \$705 million to adequately do the job.

I can see that my time is up and will close with that, Mr. Chairman, and will take any questions that you have.

[Statement of Mr. Ostler may be found at end of hearing.]

Mr. STUBBS. Thank you very much, sir. Next, Mr. Dennis Hart from the New Jersey Department of Environmental Protection and Energy. Mr. Hart, welcome.

STATEMENT OF DENNIS HART, ADMINISTRATOR FOR ENVIRONMENTAL REGULATION, NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

Mr. HART. Mr. Chairman, members of the subcommittee, thank you. My name is Dennis Hart, and I am the administrator of the wastewater program for the New Jersey Department of Environmental Protection and Energy. I would like to thank you for the opportunity to come here today and speak before this committee on the issues which are really critical issues on water-related projects.

The New Jersey Department of Environmental Protection and Energy is highly supportive of inclusion of the wastewater treatment construction projects in any infrastructure and jobs bill which is developed in the near future. We believe that not only will these projects deal with some very critical environmental problems but would also greatly help the local and state economies through the jobs created from actual construction and also because of the ability of new and expanded treatment facilities to accommodate additional residential, commercial and industrial growth throughout the state.

The 1990 Needs Survey for New Jersey indicates that there are over \$4.4 billion worth of wastewater treatment improvements necessary in the State of New Jersey. Of these needs, almost \$500 million could be considered current needs for projects which will start construction by the end of 1994. A list of the specific projects is provided for the record. Another \$500 million in needs are anticipated to begin construction by the end of 1997 for a total of \$1 billion in short-term needs for wastewater improvement.

As I mentioned earlier, we feel that wastewater treatment projects will definitely be a stimulus to the local economy. Based on data developed by our New Jersey Wastewater Treatment Trust, it is estimated that for every \$100 million worth of construction, 3,500 direct and 7,000 indirect jobs are created during the life of the project.

In addition, wastewater treatment expansions and their environmental improvements are sorely needed by the state's municipalities to allow for growth and development. This is particularly keen in our innercity areas. The lack of adequate Federal funding for

clean water infrastructure projects has significantly impacted economic productivity at the local level. In several areas of the state, wastewater facilities have been placed on sewer bans. These bans, which are placed on a system either because of inadequate treatment or, more importantly, inadequate conveyance, have placed local economies at a standstill.

In particular, on our innercity areas in New Jersey, we have sewer lines and infrastructure projects that the local municipalities are dealing with sewer lines that are well over 100 years old. These lines are totally incapable of handling the combined sewer overflow flows as well as some of the daily flows into the system. Sufficient Federal funding for wastewater treatment projects of not only sewer plants but the interceptor lines and the collection systems are extremely urgent for the State of New Jersey and I am sure for other areas throughout the country.

In the third question in your letter, you ask what would be the best method to providing this funding. The Department believes that the same results as an expanded construction grant program could be accomplished through modifications to a newly capitalized State Revolving Fund. These modifications could provide the flexibility to states and localities to allow for smaller municipalities to have their grant money to subsidize the loan while maintaining the loan program. Small communities with serious wastewater treatment needs cannot afford the low interest loans. This Clean Water Act should give states flexibility, allowing them to subsidize the principal loan amounts under the SRF program.

Lastly, the Department is still in the process of evaluating the polluter pays revenue generating fee program proposal, and we would like to submit you comments in the very near future. While we have long conceptually believed in a polluter pays principle, any new fees must be closely evaluated in the context of all the existing regulatory fees a facility must pay and the net benefits realized from the imposition of new fees.

Again, I thank you for the opportunity to appear here today, and I am available for any questions.

[Statement of Mr. Hart may be found at end of hearing.]

Mr. STUDDS. Thank you very much, sir. Next, Mr. John Spencer speaking for the Association of Metropolitan Sewerage Agencies. Mr. Spencer.

STATEMENT OF JOHN SPENCER, DIRECTOR, WATER POLLUTION CONTROL DEPARTMENT FOR THE SEATTLE METROPOLITAN AREA, ASSOCIATION OF METROPOLITAN SEWERAGE AGENCIES

Mr. SPENCER. Thank you, Mr. Chairman, and members of the Subcommittee, and Congresswoman Unsoeld. Nice to see you this morning. I am representing AMSA which has 150 members nationwide that are the largest wastewater treatment agencies. I am also the Director of Seattle Metro's Wastewater Treatment System. I would like to summarize my comments and also depart somewhat from my prepared comments to share some of my perspectives with the Subcommittee.

You are so right, Mr. Chairman. The job is not done. We have not met the water quality needs of this nation. We have not met

the goals of the Clean Water Act. AMSA surveyed 106 of its members last year and has documented a need from those agencies alone of over \$22.6 billion of construction left to be done. This has been published in a report that I think has been made available to the committee called "The Cost of Clean." Our figures correlate very well with EPA's estimates of the need nationwide for construction and also with the estimates reported to you by ASIWPCA.

But not only are there large construction costs out there yet to be borne by local communities, the O & M costs are going up at the same time. In the case of wastewater treatment facilities, the O & M costs are doubling every eight years. When you take the capital and the O & M costs together, our local sewer rates are going up on an average nationwide, doubling every six years, and that is a between nine and eleven percent increase in sewer rates on an annual average for all the cities in the Nation annually.

At Seattle Metro, we embarked on a \$1.7 billion capital improvement program in 1986. That came on the heels of a \$500 million program that was just completed with grants and loans—\$70 million from Federal grants, a large grant from the state, plus use of the State Revolving Fund. We have seen our rates go up 67 percent since 1986, and another 65 percent increase is expected by 1997. These rates, unfortunately, fall on every household the same regardless of their income. There is no differential made for anybody in the community.

Mr. Chairman, the wastewater treatment projects can and do create jobs. We can provide facilities that are necessary for economic growth. They are the basic infrastructure that allows growth to occur in our cities. But not only that, they add value. They add value by protecting the environment and improving the quality of life for all of our citizens that live in our cities. \$1 billion in wastewater treatment system construction produces around 50,000 jobs. Seattle Metro's largest project, a \$600 million construction project that is underway right now, has 300 highly paid construction workers on the site, and by 1995, we will be adding 50 permanent operation and maintenance workers.

But I want to add here that the construction of wastewater treatment facilities is not just the pouring of concrete. Those facilities are full of mechanical and electrical equipment. A lot of steel goes into those facilities, and that material, that equipment, those electrical components, all of that comes from the manufacturing sector, and I believe that economists would show you that an investment in these kind of facilities has tremendous direct as well as indirect benefits to the economy.

We also have to realize that wastewater treatment facilities, while we finance them over 30 or 40 years, are 100-year facilities. They are put in the ground, and they are there to serve the communities for a long time. So we are talking truly about investment in the future, and we need to get on with that job.

The infrastructure investment for jobs and growth must include water and wastewater systems. In the short-term, grants are needed for projects ready to go. We do have projects ready to go, as you have already heard from previous witnesses. We need your confidence that we can do this. We need EPA cooperation to

streamline the process and procedures. In the long run, we support the SRF, not by itself. We think that there is tremendous potential in the combination of grants and loans.

In the State of Washington, the grant program was established. Congresswoman Unsoeld was instrumental in establishing a Centennial Clean Water Act Fund which the state has used to put together a combination of grant and loans together with their SRF fund, but it is still not enough money. Metro, my city, has agreed to take its grant money over a 20-year period. We have also agreed to take less than 50 percent of the SRF funds because there is simply not enough to share with the other communities in the State of Washington. It is still not enough.

AMSA supports a larger Federal role in dedicating revenue specifically for water quality investments and tying these sources to the sources of pollution. That makes a lot of sense to us. An increase provides a revenue source and at the same time it is an incentive to reduce pollution. AMSA supports your assertion that a Federal investment of \$6 billion annually is required. That is not a lot of money, but we think it would certainly boost this program. Keep in mind that I have one project in my city of a half a billion dollars. That is one project. Six billion is not a lot when you put that in that perspective.

AMSA supports your recommendation for Federal fund disbursement. We need to broaden the project eligibilities, authorize a broader array of financial tools, and revise the current allocation formula. We do look forward to working with your committee to help you prepare this legislation and work on this legislation. And let me just close by saying that it is time that Federal revenue sources be dedicated to funding the clean water goals of the nation. By doing so, we can create jobs. We can provide the utility systems needed for economic growth in our cities. Thank you very much.

[Statement of Mr. Spencer may be found at end of hearing.]

Mr. STUDDS. Thank you very much, sir. I have to observe, I am looking at him suffering over there. The mayor on your far right is faced with helping support a single project whose price tag is now slightly in excess of \$6 billion.

Mr. SPENCER. That is right.

Mr. STUDDS. The next and final member of the panel is the President of the National Utilities Contractors Association whom I suspect believes that his first name is Jerry, but it looks like Gerry to me. Mr. Gerry Dorfman. Mr. Dorfman, welcome.

STATEMENT OF GERRY DORFMAN, PRESIDENT, NATIONAL UTILITIES CONTRACTORS ASSOCIATION

Mr. DORFMAN. Thank you, Mr. Chairman. It is Gerry Dorfman.

Mr. STUDDS. Oh, well.

Mr. DORFMAN. I am a contractor from southern California, and I am the President-Elect of the National Utilities Contractors Association, NUCA, and I am here to testify on behalf of the contractors, its suppliers and associates that are part of our organization. I am not an economist, but I am here to try to tell you what contractors are seeing out in the country.

The problem is twofold, and you have heard about it from my fellow panel members. It is wastewater and water. The sewers are outdated. They are decaying. They are neglected. They are worn out. I think I can best have you follow me through a story of a job that we did in a very rural part of northern California in Butte County in which under FMHA grant program this was a job advertised that I went to prospect, and it was replacing outdated sewer septic tanks at each individual home. You would wonder how surprised I was when taking the plans and looking at each house, and you have to go into the backyard so you know what kind of improvement you are going to take out in order to put a new tank in, but you couldn't walk in the yard for the sewage. And you look up and you see children in the house—in the kitchen staring out at you. And I realized that those children didn't have a backyard to play in. It is mind-boggling.

And it was gratifying a year later to be able to go back to that community when we sold the project, because we were the successful bidder, and realize now that there were backyards for people—for when the parents came home to have a barbecue or the children wanted to play. And unless you experienced that firsthand, it is difficult to understand the impact of something like that. That is one story of many, many from my contractors throughout the country about the sewer system.

You all heard of combined sewage overflows. Those were systems designed many, many years ago, and all as they do now is pollute. I did work up in the State of Oregon and watched many a rainy day when we had to stop work where the sewage went right into the Willamette River. Very, very discouraging.

It is not only the sewer system, it is also the domestic water system. I brought with me and behind me a picture of a water pipe from a small community in Rhode Island. This pipe is 100 years old. The one behind me is 50 years old. What you are seeing is encrusted corrosion. That is a water delivery system to the citizens of a community in Rhode Island. Hard to believe.

Mr. STUDDS. Mr. Reed was having a very nice morning until he saw that.

Mr. DORFMAN. I am sorry. But it is important that you understand what we are finding out there, what exists out there. This is only one community. This is happening all over the United States of America.

A lot is spoken to the economic stimulus, and I am prejudice to the extent that I am a contractor, and I represent a contractors organization and their associates and supplies. But I want you to know that we are but a small part of the picture of working and developing the infrastructure. There are, when you put a pipeline out to bid, six, eight, ten different kinds of pipe—concrete pipe and clay pipe and ductile layer pipe, and who makes the pipe? The manufacturers. And who transports it on trucks and what about the tires for the trucks? There are hundreds of thousands of people available to work—poised—the labor unions, operating engineers, Teamsters, truck drivers, laborers, cement masons, carpenters. All these people go to work when you put wastewater pipeline systems out to bid.

The important thing to realize, I think, is that you have a sewer system and water system that in their present state are what I would call devious partners, but I think I went too far. So I will stop, and I will accept questions. I am sorry.

[Statement of Mr. Dorfman may be found at end of hearing.]

Mr. STUDDS. Thank you very much, sir. Thank you. We always like pictures and maps. I thought that was a NASA space flight, but I didn't realize it was a picture of Mr. Reed's district. I think we all want to thank—

Mr. REED. It is not my district, Mr. Chairman. It is Pawtucket, isn't it, Mr. Dorfman?

Mr. DORFMAN. Yes, it is, sir.

Mr. STUDDS. We want to thank you. It is always with some trepidation when your organization threatens a gift and considering what it might have been, we appreciate it very, very much.

Mr. DORFMAN. You are welcome.

Mr. STUDDS. You know, it just occurred to me that this subject didn't used to draw crowds. It was hardly the most romantic or telegenic of the subjects which we could address around here, and I think there is real significance to the fact that we now have standing room only when we discuss water and sewer. This is real, and I think you could almost palpably feel the pain on the part of the mayor here when he is talking about how a small community in concert with some 40 or 45 others is supposed to shoulder a \$6 billion burden—almost entirely on the shoulders of the individual homeowners and the small businesses that attempt to prosper there.

We have a very real problem, a very major problem and no very easy solution. That tends to be the nature of major problems. You heard the President last night. And although we have not seen the fine print, I think it is probably safe to say that at the moment no one is contemplating anything on the order of \$6 billion a year out of appropriated funds to address this subject. The question, therefore, it seems to me is not do we address this subject, we have no choice. We must address the subject. The question then is how in the name of all that is holy do we find plus or minus \$6 billion a year at least to deal with a Federal statute, which I have not heard seriously questioned, although the mayor suggests, I think, quite understandably in very human ways, that if people are asked to pay for it in impossible fashions, they are going to be questioning it eventually. We may court that kind of a disastrous set of consequences.

But how do we find the money? You have before you one possible innovative funding mechanism, based on the principle that the polluter pays. I am by no means wed to the proposition that it is the only or necessarily the best method, but at the moment, so far as I know, absent the Secretary of the Treasury stumbling upon an unexpected \$6 billion in his desk drawer, there is no other proposition in the city that I know of that might realistically yield the kinds of revenues that I suspect everyone in this room understands that we must find.

So my first question, and it is to all of you, is do you—and be as specific as you possibly can—some of you have indicated that you are not sure you can yet, and some of you have indicated that you

have some reservations about some of the component parts of the funding mechanism before you—do you agree with it? Do you not? And if not, where do you suggest we get \$6 billion a year? I ask this realizing the magnitude of the question, but it is the question we have to answer, and I suspect that we have got to answer it this year because there will come a time when you cannot squeeze additional blood from the proverbial stone, and we are very close to that in some of our communities as you have heard. Mayor Sheets?

Mr. SHEETS. Mr. Chairman, I would simply say that this burden has to be equitably shared, and the redistribution of wealth in this country has always really occurred through either fees or taxes, and I think that for a number of years now we have just somehow believed that we could expand services and increase the cost of services and not increase taxes or fees. And, very clearly, if we are going to fund \$6 billion annually, we are going to have to find a source for that, and certainly as far as I am concerned, the sources that have been identified in this program, I think, are very, very equitable. Those who add to pollution should pay, and I believe that we are going to have to adopt that if we are going to see \$6 billion made available to the communities of this country.

Mr. STUDDS. Anyone else? This is sort of the "the" question. Mr. Spencer.

Mr. SPENCER. The AMSA organization clearly believes that the "polluter pays" is a very good concept. It hasn't adopted a specific resolution with regard to that, but we clearly feel that it is an excellent concept and that we need to have dedicated to Federal revenue sources. The State of Washington enacted, in the early '80's, a grant program that is based upon cigarette tax. You might wonder what has that got to do with "polluter pays," but I invite you to come out to look at my treatment plants where we have a combined system, and I can demonstrate quite clearly to you that, in fact, that cigarettes are a part of the waste stream.

In the Seattle area, we would very much support a concept of the polluter pays as a way to help finance these programs. We would want to make sure that it is established in a way that doesn't drive our industries out of our area or that the revenue sources don't end up going to other places, and it doesn't help the industrial or economic base.

Mr. STUDDS. Let me encourage your group and its members and everyone else to try to develop a specific position quickly. I believe that this is the year for us to act, both because the problem is so pressing and so imminent in so many places, and for a lot of other reasons unrelated to this particular problem. I think this is the year for innovation and for thinking in imaginative and new terms, and I fear that if we do not act this year, it will be very, very difficult to do thereafter.

Mr. SPENCER. Well, we really appreciate your leadership, and we will definitely move forward and address this question very quickly.

Mr. STUDDS. I appreciate that. We are going to break in a moment. I want to give other people a chance to respond. I want to point out to members that the light system applies to members and Chairs and ranking members as well. I don't know why the staff member forgot it. I did not. We will let the panel conclude their

answer to this question. We will recess for 10 minutes in order to allow members to get to the vote and back. Well, the new average age is younger. Nine minutes ought to do for that, and then we will resume. Anyone else want to conclude with this question? Mr. Hart.

Mr. HART. Mr. Chairman, in the State of New Jersey we do support the concept of polluter pays. Our only caution along those lines are that 85 percent of our Department's operating budget right now revolves around that principle. We only get 15 percent of operating funds from appropriations—from the legislature, and that is starting to cause us problems as far as the challenges of the inequities and the fee system and the driving of industries out of this state and things of that nature. We do support the polluter pays concept.

I would also like to follow up on the mayor's first comments, that we also hear the same questions from all of our public hearings now of these things are starting to get too costly for the average citizen. And I do believe that the Clean Water Act is not flawed. I think we could squeeze money out of doing a better job in our prioritization of the things we are going to deal with as well as just the administrative and mechanical burdens that we put ourselves through in implementing the Clean Water Act.

Mr. STUDDS. Let me just make one observation. If I understood you correctly, when you expressed your fear about raising the fees to the point where you might be driving industries out of the state, I think implicit in that may well lie an argument for uniform national leverage.

Mr. HART. I think that would help tremendously because in trying to run a polluter pays fee system in our state, having the national—just a national floor on that would help us out tremendously.

Mr. STUDDS. It does not seem to make much sense to put communities in situations where they have to disadvantage themselves vis-a-vis other regions. By the same token, Ms. Margerum, if I recall your testimony, you expressed unhappiness with that concept?

Ms. MARGERUM. No. The National League of Cities supports the idea of the polluter pays. Our concern was with placing fees on toxic industrial discharges as a possible source for local wastewater plants to also derive revenue from that source.

Mr. STUDDS. Where else would we turn?

Ms. MARGERUM. Well, this would be—no, we agreed on the principle of excise taxes on polluting products. We agreed with that, and we just had some reservations. We don't have a firm position on that but would be glad to get back to you.

Mr. STUDDS. Let me urge you to try to get one and to help us because—

Ms. MARGERUM. Because we feel also that by putting it on products, that may encourage manufacturers then to seek other kinds of products that would not be as polluting. It would solve two problems.

Mr. STUDDS. Anyone else?

Mr. DORFMAN. Mr. Chairman, NUCA also supports the direct revenue source, and in connection with that, we are reviewing other proposals that we would like to submit to your staff.

Mr. STUDDS. We would appreciate that. Mr. Ostler?

Mr. OSTLER. Mr. Chairman, just to make sure, on behalf of the states, I think the states recognize the economic realities and do recognize the viability of fees as a way to partially solve the problems that we are facing in clean water. The way the fees are applied, I think, is very important, and those details need to be reviewed and evaluated so that it is done fairly and equitably.

Mr. STUDDS. I appreciate that. My time has expired, and we will recess for approximately nine minutes and then resume.

[Recess.]

Mr. STUDDS. We will resume, and we will continue questioning with our distinguished ranking member, the gentleman from New Jersey.

Mr. SAXTON. Thank you, Mr. Chairman, and let me first apologize for not having been here at the outset, but I understand that Mr. Ravenel took care of my duties, and I would like to welcome Dennis Hart here from my home state of New Jersey.

My question, I think, goes to how we prioritize and whether there needs to be a Federal rule or whether that is best left in the hands of the states, which I suspect may be the answer, but particularly in the northeastern part of the United States and, in particular, New York, New Jersey, and Connecticut where the population is so dense and where we see evidence of combined sewer overflow problems along the coast and in the bays and estuaries, and where we see the CSO problem manifest itself to such a degree. Mr. Hart, is there a mechanism that we have on a regional basis as to how we prioritize? Do we need a regional approach to these kinds of issues, or is the current system working well in terms of prioritizing what needs to get done?

Mr. HART. Well, I think the current system works well in prioritizing who wants to do something, and that is one of the problems we have with the system. Right now in New Jersey there are 300 CSO outfalls in New Jersey, and the priority system right now, we have a ranking system on environmental impact, but it revolves around who is coming in to do their projects, and we have a more difficult time in prioritizing what we would like to fund. So I would still think it should be done on a state basis, but we do need to factor in the overall priorities of what needs to get done.

Mr. SAXTON. Are we making progress in any real sense of the word in dealing with CSO's, and, if so, how do you measure that progress?

Mr. HART. Yes. We have made progress in the individual dealings with some of the individual CSO's, but I think that is really for New Jersey is where the real higher costs are going to be in dealing with the solids and floatables issue at a minimum at CSO's. It is going to be a large infrastructure need for the state. We have made some individual progress in just fixing the regulators at CSO's. In the city of Perth Amboy, in particular, recently we were able to lift their sewer ban and allow a multimillion dollar public housing project to go in simply because the CSO's weren't able to be fixed for a number of years.

Mr. SAXTON. Now, Mr. Dorfman mentioned the problem with septic tanks and individual sewer systems that failed to work in the tri-state area. Has that problem diminished to any degree, or is that still a major concern that we need to deal with?

Mr. HART. I am not sure of the level of concern, but it still is a concern for the state especially along the areas of the bays where you have septic systems that are readily discharging into bays, and we have an enforcement effort that goes out and tries to find them and then get those tied into local sewage authorities. On a state the generates a lot of drinking water from groundwater, it is still an issue for us.

Mr. SAXTON. Anyone else care to comment on either of those questions? I have another question. As members of this committee know and as many people outside of this committee know, the issue of dumping sewage sludge in the ocean in the northeast has finally come to an end, and I might add that it is my belief that without this committee taking such a great interest in that subject that sewage sludge would probably, in all likelihood, still find its way into the ocean. And so we take some degree of pride as committee members in making sure that sewage sludge is now out of the ocean. I know that there was some degree of consternation among those who were previous dumpers as to what they were going to do with their sludge. Can you tell us in just a few words what kind of progress has been made, how expensive it is, what processes there are to deal with that humongous problem that we were told couldn't be dealt with?

Mr. HART. Yes, absolutely. I think you are right, that the Federal and state effort and the effort of this committee did a tremendous job in ending the ocean dumping of sludge. In New Jersey right now, 22 percent of our state sludge is beneficially reused into a product form, whether it is for land application or landfill reclamation or just for free market distribution to the general public. The folks that were discharging into the ocean—were dumping in the ocean represents 60 percent of the state's sludge generation. We are under Federal and state consent agreements with those. The Middlesex Utilities Authority is already on board with their sludge processing facility that they use as well as Rahway Valley is just coming out of being or they are just in compliance in meeting the requirements of the consent order.

All of those authorities are now working on beneficial reuse of sludge. We have a policy in the state that we are not going to entertain incinerators for quite a long-term where it comes to sludge. Our goal right now as these former ocean dumpers come—right now they are all in some stage of a beneficial reuse project to see if their sludge can be reused. When they are complete, and I do think that we will be going to beneficial reuse for the most part, we will jump to about 80 percent of the state's sludges will be in beneficial reuse. They are expensive projects. In many instances, they are much more expensive than an incinerator.

The Burlington County project in and of itself was originally costed out at as a \$100 million sludge composting facility. It has been scaled back to 50 to 60 million, but it is still a tremendous cost. And our big effort right now is not only that but opening up the markets for the product.

Mr. SAXTON. Thank you very much, Mr. Chairman. My time has expired. Thank you, Mr. Hart.

Mr. STUDDS. I thank the gentleman. We will try to keep to our—oh, well, for heaven's sake. I forgot the rule. If a constituent is seeking recognition, the gentleman from New Jersey still has time. Mayor Sheets wants to respond.

Mr. SAXTON. Yes, Mayor?

Mr. SHEETS. To the gentleman from New Jersey, we are ending the dumping of sewage sludge into Boston Harbor. It is costing us \$7 billion, and perhaps you missed my earlier comment, but the local residents and businesses are picking up 92 percent of that, and the average family now pays between \$500 and \$600 a year in water and sewer fees clearly indicating that while the problems while may identified at either the Federal or state level, certainly the solutions in terms of funding have to be much broader-based than that, and, obviously, that is why we are here.

And just for additional information, the process that is being used by the Massachusetts Water Resources Authority in not putting that sludge back into Boston Harbor and Quincy Bay is taking 60, 70 ton of sludge a day and pelletizing it—creating pellets and then marketing those pellets. Now, the problem with that process is that that is extraordinarily expensive, number 1, and, number 2, sometimes it doesn't work well because you are dealing with volumes that you have never had to deal with before in terms of the storage of pellets and so forth.

What we are finding is if we look at taking sludge cake and not pelletizing it, we can landfill that material much cheaper. And because of the cost of the whole operation, which will ultimately be \$7 billion, the MWRA is working with us now trying to find a much cheaper way to deal with that end product which is simply the landfilling of sludge cake. And that is all being driven by cost.

Mr. STUDDS. I thank the gentleman. I am going to try to, as best I can remember it, follow our longstanding rule of recognizing members in order of their loyal appearance at the outset. The gentlewoman from Washington I think is—you think it is the gentleman from Rhode Island who has been abused and rebuked and scorned throughout the morning so the gentleman from Rhode Island is recognized.

Mr. REED. Thank you, Mr. Chairman. I would first like to thank Mr. Dorfman on behalf of the Pawtucket Chamber of Commerce for his interesting display, and as I said, Pawtucket is not in my district, but it gives me no comfort at all that it is not in my district because thousands of Rhode Islanders for many, many weeks were without water. I can recall stopping at a fire station in Pawtucket to check with some firefighters and suddenly seeing all these people streaming in and streaming out—sort of an unusual traffic pattern. Then it dawned on me that they were going to pick up their bottled water because they had no water. And I also take no comfort in it because a few days later, literally, there were episodes in other parts of my district where rural systems had been compromised because of leaching into their wells. So I think what I am saying and what every member of this committee is saying is the problem is very real and substantial. What has not yet been real and substantial is Federal assistance to solve it. But, again,

thank you for keeping Rhode Island in the forefront of this mighty struggle.

I have a general question, and I think the municipal officials might be more primed to answer it. My presumption is that there are differential charges for residential users versus commercial users, and the commercial users pay higher sewer fees. I wonder if there is a further presumption that polluters in the category of commercial users would pay even higher fees, i.e., that at the local level you are doing something like the Chairman is proposing. In the experience of the mayors and of the state officials, are there differential polluter pay more fees in terms of these local sewage charges? Mayor Margerum?

Ms. MARGERUM. I was going to say in terms of the charges, ours is on a per gallonage basis so that we—just the sewer charges themselves are not. We do not charge additional fees to industrial toxic waste discharge, but I believe that some other communities do and that that was the concern that I had.

Mr. REED. So in your community basically it is just per gallon so it is the same fee for residents, same fee for, you know, clean industry, same fee for dirty industry?

Ms. MARGERUM. Yes. It is based on the pipe size.

Mr. SPENCER. In the Seattle Metro area, we have a uniform rate that is based upon a monthly gallonage. So a commercial user would be measured in terms of their residential customer equivalent. But we do charge them a surcharge if they have a high strength waste, and we also charge a fee for the cost of administering our pretreatment enforcement program.

Mr. REED. Anyone else? Mayor Sheets?

Mr. SHEETS. In Quincy and the MWRA District, really, the charge is based on the gallonage of water used. There is no differential for residential and commercial.

Mr. REED. It seems to me, again, that the Chairman is proposing, I think, a very novel and worthwhile attempt to internalize the cost to those people who are generating the cost, but it might make more sense analytically at the very closest level to these costs to start differentiating and making the polluter pay. And Mr. Spencer sort of does that in a way in Seattle, but I would suspect across the country that that is not being done, and that might be an alternative complementary approach to what we are proposing up here—just a comment.

Mr. SPENCER. Yes. That is why we say our area can support the concept of the polluter pays, and I think the gentleman from New Jersey here made the point very well that in order to make that really work on an equitable basis, there needs to be a national baseline so that one area isn't charging an industry in other area and then you cause them to flee. And we don't want to make that happen.

Mr. REED. So your point would be that this is equitable because, and I see the logic to it, that there would not be the opportunity to escape and evade?

Mr. SPENCER. That is right. That is the fundamental of the Clean Water Act. That is why we moved toward national standards.

Mr. REED. Let me just take another line of questioning because the time is limited, and that is Mr. Spencer mentioned that he saw

cost increases in terms of O & M, and just a general across-the-board question, what are the forces that are driving your cost up? Is it capital requirements? Is it Federal Courts telling you to build more treatments, or is it just O & M which is something, again, that might be controllable at the local level more so than at the national level?

Mr. SPENCER. Well, it is all of the above, but when you go to secondary treatment, you suddenly have huge energy costs, and those energy costs drive your O & M up. The systems we are building and the reliability they have to have require a tremendous amount of expertise in the operation of those systems so that really drives the O & M. The Federal requirements, of course, are behind that, and we are not objecting to the need to get to secondary treatment or to control combined sewer overflows. But when you do install those capital facilities, they then have a high operating cost. And believe me, the cities have yet to see the enormous effect of operating costs after they build these facilities.

Mr. REED. Mayor, quickly, because I have one more question.

Ms. MARGERUM. Yes. All of those same problems that the cities have are the number of mandates that we are having to meet all at the same time, and, you know, they range the whole thing from pretreatment to all of the other requirements for our NPDS permit, removing nitrogen, removing chlorine, adding chlorine, meeting all of those requirements. All of them are hitting us at the same time, and each one of them is costly.

Mr. REED. Thank you very much. My time has expired. Mr. Chairman?

Mr. STRUDS. Thank you, sir. The gentleman from South Carolina, Mr. Ravenel.

Mr. RAVENEL. Thank you, Mr. Chairman. I represent coastal South Carolina and among other places, Charleston. Charleston Harbor is in my district. And back when I was a teenager during the '40's and you would water ski there, our harbor and the rivers leading into it were so polluted that if you did not shower within an hour or hour and a half after you water skied, you would break out in a rash all over your skin.

So in the early '50's right after the war, we got started on cleaning up our harbor and the tributaries and all that lead into it, and some of you have probably been there, and you know we have a lot of them. And this was long before the Clean Water Act was passed, and as a consequence, our harbor is relatively clean and getting cleaner. We swim in it. We fish in it. We eat the fish from it and not lifted the shellfish ban, but that is very close to doing that. And most of our major facilities were built in the '50's and '60's being constantly upgraded and improved, and we finance that, of course. Any Federal money we can get, we certainly use, but impact fees now to developers, general revenue bonds, and general obligation bonds and, of course, revenue bonds are funding the improvements.

My question to Mayor Sheets is how in the world did Boston Harbor get so terribly polluted, and when did you all get started on trying to clean it up? What caused it, sir?

Mr. SHEETS. I think you should direct that question to Mayor Flynn. But, obviously, number 1, you have to take into consider-

ation the character of the harbor and the number of cities and towns really that pollute the harbor, and you also have to look at the authority that has traditionally been responsible for that. In the city of Quincy and on the south shore, that was the Metropolitan District Commission, and that was a public authority over which the cities and the towns had absolutely no control.

And I will tell you a true story. Our city solicitor was jogging on the beach of Quincy Bay, and he stepped in human excrement and came back and told my predecessor, Mayor McCauley, about the experience. And we simply then sued the MDC. That suit was joined by a number of other associations. We happened to win that suit, and that was a two-edged sword because we are now cleaning up Boston Harbor as a result of that suit under Court Order and have a very narrow and restricted time frame to do so. We have no opportunity even to string out some of those costs. Those costs are really tied into the end of this century. You are looking at \$7 billion.

So, quite frankly, from our perspective, the issue wasn't drawn by a city or a town but was drawn by a public authority, the MDC, which simply refused to keep its sewage treatment facilities updated and allow those facilities to pollute not only Quincy Bay but Boston Harbor. In any major rainstorm, they would simply open the outfalls, and the raw sewage would be dumped into the bay. That had been going on for years and years. That is why the solicitor had that experience. That is why we filed the lawsuit. And, frankly, that is why, you know, we were not part of the earlier Title II program because our lawsuit came just at the tail end of that program so there was no Federal money available. And that is why we are bearing and the cities and towns 92 percent of a \$7 billion cost.

Mr. RAVENEL. I can certainly appreciate your problem, but, you know, it just seems to me like the people who messed it up ought to be the people who clean it up. Down where I come from, we don't have polluters because we are so zealous in trying to improve the quality of our waters both inland and along the coast, and those who were once polluters are not just discharges. And I don't believe that in my area the legislation under consideration would yield too much money, you know, down there. Of course, I can appreciate you-all's problem and sympathize with you about it. Yes?

Mr. SPENCER. May I add? Seattle Metro was formed in the early '60's because Lake Washington was fouled, and when I was going to college at the University of Washington, you had to roll your window up on your car to go across the bridge on the lake because it smelled so bad. And the citizens in that area entirely with local funds did the cleanup. And Seattle Metro has received very little Federal funding over the years.

But the national requirements of secondary treatment, the added requirements of combined sewer overflow control, the requirements of sediment cleanup, the recent settlement of the lawsuit with NOAA over damage to marine resources has put an enormous burden on the citizens on that area, and the rates are going up there, and the Federal funding would be necessary. I guess I would conclude, Mr. Congressman, that the entire nation is going to benefit by a program that will help fund this kind of infrastructure be-

cause it improves the quality of life for everybody. I think the folks in Charleston ought to be proud that they can go to Boston or can go to Seattle and know that the water is clean, and we are certainly proud to know that Charleston is a place we can go and water ski. I think it is a benefit to all of us.

Mr. OSTLER. Mr. Chairman, I am sorry to interrupt, but I need to ask you if I may be excused? I have got another commitment at noon across town with a meeting of the 50 states discussing some of these same issues along with Senator Baucus. I apologize, but I will need to go over there. I would like to compliment your staff on the help that they have been to the states in what we have done up to this point. I invite you or your staff, if you have time today or tomorrow, to join us and discuss these polluter fees—if that were possible.

Mr. STUDDS. We appreciate that very much. You are, of course, excused. We appreciate your testimony, and I hope you will say the same thing again to the Senator from Montana.

Mr. GILCHREST. Mr. Chairman?

Mr. STUDDS. Yes.

Mr. GILCHREST. This is a gentleman that I had some questions for, and that is why I came back. But if you are going to be here for the next couple of days, if we could hook up—we don't have to do it now, but I would like to talk to you about your ideas for grants versus State Revolving Loan Fund and the combination thereof. If we can get in touch with you in the next day or so, I would appreciate it.

Mr. OSTLER. We will be happy to do that.

Mr. GILCHREST. Thank you.

Mr. STUDDS. Thank you, sir. Let me say to the gentleman from South Carolina that he better work hard on understanding our-all's problem or else our-all's invitation to him-all to come and meet a whale will be withdrawn. Will the gentlewoman from Washington accept recognition at this point?

Mrs. UNSOELD. Yes. Thank you very much, Mr. Chairman, and welcome, John. I wish I had had in 1985-86 a group such as this panel behind me when in view of the Federal funds that had very generously been matched with state and local funds to put in a lot of the secondary treatment facilities, and I saw that shrinking to virtually nothing, wanted two things from a state fund: One, a pay-as-you-go system and, second, a revenue stream that was going to stay equal to the demands of the future.

As a new member of the state legislature, I succeeded in killing it the first year because I couldn't get either of those two principles established. And as we came back the second year, the Senate was finally convinced. My proposal had been for a 25 cents per \$1,000 property tax, and I felt that had a chance of growing, and I thought it was the size of a pool that we would need. But the Senate balked at the property tax, and, frankly, the cities and the others that I was trying to benefit were not there to support it.

I won on the principle of pay-as-you-go, but the Senate insisted on the cigarette tax, and there was, as Mr. Spencer pointed out, probably no relationship between clean water and cigarettes, but money is money, and we took it wherever we could get it. But, Mr. Spencer, I think you will agree with me that probably that is a di-

minishing fund, and it is certainly not one that keeps up with the needs.

Mr. SPENCER. Yes. That is a bittersweet thing. We are glad to see the reduction in the smoking and the revenue has gone down, but on the other hand, it has provided around \$40 million a year. If you can believe five cents on a package of cigarettes produces \$40 million in one state, that is a lot of money.

Mrs. UNSOELD. But the 25 cents per \$1,000 would have kept up with it.

Mr. SPENCER. Right. Yes.

Mrs. UNSOELD. All right. So now, what kind of a problem are we looking at? Because in addition to the secondary treatment facilities, we've got the Safe Drinking Water Act coming along and the needs there. So on this report about which you spoke and was in your written testimony, Mr. Spencer, the \$22.6 billion to 1995, do you believe that that is the right level of expenditure that would solve our nation's water quality problems?

Mr. SPENCER. It would certainly contribute immensely to achieving the goals of the Clean Water Act. That is a lot of money that would complete a lot of projects, but that alone isn't going to do it. We really do need a comprehensive watershed management program in this nation so that we can focus in on those water bodies where it is not just the point source discharges, but you also have the nonpoint sources from runoff from urban areas for storm water issues from agriculture and others, and I think there is a real opportunity to optimize, if you will, the total expenditures that will have to be made in order to get a real cost effective cleanup if you look at it on a watershed basis. And that is where we can get—I think EPA should be given the ability to have a lot of flexibility in managing their programs where there are comprehensive watershed basin plans.

Mrs. UNSOELD. Now, EPA reports, I think, it is 90 percent of our municipalities are in compliance with the secondary treatment requirements, but 70 percent of those not in compliance are small communities that probably have the most difficult financial situations right now in those communities. Historically, they were the last to get funds sometimes because of the conditions that they were not in the scale of things—the biggest polluters at the time—and, therefore, the requirements hadn't hit them. Now, the funds aren't there. How do we address the special problems of the small communities?

Mr. SPENCER. Well, you probably are not as familiar as you might have been when you were a state legislator, but the State of Washington has a program, I think, is a model program that ought to be looked at. They are putting together a combination of grants and loans. In this case, it is strictly the State Centennial Clean Water Act and the State Revolving Loan Fund program, and in that combination, they can help finance entirely these local communities' systems and give special advantage to those communities that are depressed or don't have the wherewithal to pay back these loans. The state needs more flexibility in that loan program so that they can provide lower interest rates, and they can increase what is ultimately what you might call the grant yield out of this program.

Mrs. UNSOELD. The flexibility, however, would come from that being a larger pot because although I had wanted that to be a matching grant program for communities because if they don't have the money to build it themselves, they are not likely to have the money to pay back it as a loan.

Mr. SPENCER. That is true.

Mrs. UNSOELD. And, hence, we have to concentrate, it seems to me, on expanding a permanent revenue source to do this, and we need to crank in the other environmental standards and demands that we are going to place on local governments so that you have got some ability to meet our expectations and the public's expectations.

Mr. SPENCER. Now, the SRF fund is terribly underfunded. I mean, in our area, we have been restricted from borrowing from it because there simply isn't enough money. We are borrowing right now 50 percent of the entire state SRF fund. We could take the whole thing, but there wouldn't be any money left for anybody else. The EPA needs to be given some ability to manage that more flexibly. They are running that program like it is a grant program. For crying out loud, we are paying the money back. Why should we go through all of the eligibility requirements, all the other paperwork when they are going to get the money back? There needs to be a lot more streamlining so that that loan program can be run flexibly with the grant programs so that you can help those depressed communities.

And I will conclude by saying that a lot of low income and elderly people also live in our big cities, and you don't see them because of the large cities' ability to spread those rates over a large population, but they are still impacted. So I think that the Mayor from Quincy's mother stands out as an example, but we have lots of those examples right in the central city of Seattle. And so I don't think that your concern about low income and elderly is unreasonable at all for small communities, but, believe me, they are right there in the large cities too.

Ms. MARGERUM. Yes. We would agree also that a combination of grant and loans is important and that the states and local communities have maximum flexibility because of different issues and different types of problems. In the Midwest, we have more nonpoint pollution, and combined sewer overflows are a major problem. So I think to give maximum flexibility, there needs to be a grant and loan combination.

Mr. STUDDS. I want to acknowledge that Mayor Sheets, I know, has to leave quite shortly to catch an airplane. May you enjoy warmer if not cleaner water, and please feel free whenever the time comes to go. The gentleman from Maryland.

Mr. GILCHREST. Thank you, Mr. Chairman. I think we would all agree with possibly the exception of South Carolina that South Carolina was the first once before in something about 100 years ago, Arthur—130 years ago?

Mr. RAVENEL. Still working on it.

Mr. GILCHREST. Mr. Spencer, you mentioned something about a comprehensive waste management plan for the entire United States—

Mr. SPENCER. Watershed management.

Mr. GILCHREST. Watershed management plan which, I think, is an excellent idea. It has to be there. There has to be uniformity. And Mrs. Unsoeld mentioned something about a permanent source of revenue that can be targeted and shared to the entire country to meet that uniformity, and I think those kind of things are an excellent idea. And when we see problems such as the one you have in Quincy that are through no fault of your own, but rather, it is past sins that we have now inherited so we have to begin to solve these problems. When you have pipes like that in Rhode Island that I wouldn't want to use to water the horses, we have to have something that is comprehensive and flexible through grants and revolving loan funds that can meet the various needs throughout the nation. And if we make that investment—if I can use that term investment—we are going to be saving money down the road for generations to come.

I think this is something that can be molded and crafted and it can be done—but when we do that, let us make sure that we are prudent, that when there is a permanent revenue source for this, there is a built-in incentive so that we continue aggressively and persistently to find alternative and innovative and new scientific methods. We don't want to end up with so much cake sludge that will go into a landfill because soon that landfill gets filled up. If we produce pellets, how will they be used. Are they going to be used in poultry houses, or are they going to be another source of problem for sludge to be dumped in the Atlantic Ocean? So I would just hope, and I guess you can respond to that because my question was specifically to the gentleman that left—I would hope that we would make sure that we have enough foresight to include those things in some type of policy.

I would like to ask just some quick questions. I would like to ask first Mr. Dorfman about the pipe in Rhode Island. If that was plastic, would you have the same crud buildup?

Mr. DORFMAN. No.

Mr. GILCHREST. Good. When I first came in from the House floor, Mr. Hart, did you mention Rahway, New Jersey?

Mr. HART. Yes.

Mr. GILCHREST. I have a couple of colleagues from New Jersey. I was born in Rahway, New Jersey.

Mr. HART. How did they let you get away?

Mr. GILCHREST. I left in '64, and it is a great place. I go back to visit once in a while, but they do have severe problems with wastewater treatment problems. And the Mayor of Quincy, what do you do with your pellets now? I know you want to go to cake sludge to put them in the landfills and then is there a predicted period of time before the landfills get filled up with that cake sludge, but what do you do with your pellets now?

Mr. SHEETS. The pellets are being marketed in different states across this country as the market can be found, and that is one of the difficulties that we found as we began to put our operation together, and that is that we were not able to move the pellet as a product quickly enough so that we had to build additional storage capacities and what we called silos, and then we found out that because of the unstable character sometimes of these pellets that there was a heating of those pellets in the silos, and that is a very

dangerous thing to have happen, obviously. So the pellets have been sold across the country, but it is very difficult to find a stable and permanent market for those. And it is very, very expensive to take sludge cake and pelletize it, and it is a process that is subject to a lot of failure. We have had fires in the pellet drums, and we have had to stop putting the pellets in the silos so it is a process that, in my opinion, when you get into large tonnage of sludge cake, it is a very questionable process.

Mr. GILCHREST. Thank you.

Mr. HART. If I could just respond to a couple of your questions—

Mr. GILCHREST. Yes.

Mr. HART [continuing]. one of which was the idea of watersheds. Most of the states, I think, and the country as well as EPA is recognizing it—to move to a watershed-based program is where everyone needs to go and where everyone wants to be, and there are a lot of impediments into getting there right now, both regulatorily and statutorily. The money, as demonstrated by the hearing today—there is a shortage of money, and we need to do a better job of focusing on the water quality problems we could solve in a watershed perspective instead of going by discharge by discharge, point by point. In New Jersey, in particular, we are holding a public hearing tomorrow on moving our entire program into a watershed-based program where we can link up the water pipes to the sewer pipes, to nonpoint sources, to the prospective development, and then make water quality decisions as opposed to looking at each individual discharge point and making sure they meet this requirement and this requirement, where we could maximize the use of the money out there.

Secondly, just in particular to Rahway, just to update you on where they are because it points to a particular problem, they have recently contracted with a large farming corporation that is going to be turning their sludge into fertilizer for farming. But there are a lot of disincentives that we even find in our own state to that. Our open land preservation program prohibits the use of solid waste on these lands, and sludge is defined in the state as a solid waste. So there are a lot of our own things that we are trying to improve that we have this disincentives built in that we need to go back into all the laws and regulations and remove some of those things.

Mr. SPENCER. Could I add that Metro's sludge is being applied to the growing of hops, and it is being applied to hops that are grown in the Yakima Valley which supplies the hops for most of the brewery industry in the United States. So we are very pleased to be able to offer you a real quality product here.

Mr. GILCHREST. Is that put on the list of ingredients? Thank you. Thank you, Mr. Chairman.

Mr. STUDDS. Get the Wisconsin delegation behind this. The gentleman from Arkansas.

Ms. LAMBERT. Thank you, Mr. Chairman. Sorry for being tardy earlier today, but I did submit my statement for the record.

Mr. STUDDS. It is in the record.

Ms. LAMBERT. Thank you. And I would certainly like to applaud the Chairman for taking a closer look at this issue and doing it so

expeditiously. I represent 25 extremely rural counties in eastern Arkansas, and this is an incredibly difficult problem for us. And some of you have certainly stressed, and I was pleased to notice my colleague, Mrs. Unsoeld, also stressing the needs in rural America. We have seen a tremendous amount of regulations and stipulations put on these small communities with very little resources to be able to meet those requirements. Very often, they end up at the bottom of the totem pole. There are no funds left, and they are kind of left high and dry. So with very few questions but a lot of dedication, I will be here for this issue defending the needs and certainly the concerns that my communities have.

Last week in my district, I visited a small community, and they all certainly have very different circumstances in these rural communities but one which lies within five miles of an incorporated city so it itself cannot incorporate. They have difficulty both with their sewer treatment and their water sources there in the community, and yet they have risen above as a community to be able to provide as much as they can for themselves.

Those were examples that I certainly like to be able to present, but there is a certain limit to what people can do on their own. And I know that certainly from the municipal side of things and the Mayor from Lafayette has impressed upon the fact that it is important to see industry still coming in, and we can't put unduly burdens that distracts them from locating in our rural communities, but they definitely have to carry their water as it were.

But I do dedicate myself to these issues and will be working hard with you. I appreciate your time and effort in coming to present to us some of your different situations and look forward to working with you. Thank you, Mr. Chairman.

Mr. STUDDS. I thank the gentlewoman. The distinguished gentleman from Delaware who has recently been promoted.

Mr. CASTLE. Well, thank you very much, Mr. Chairman. I am very pleased to be working on this issue too. This is absolutely one of the number 1 issues in the country but sort of a hidden issue literally and figuratively and one we need to bring out from underground and perhaps make better known. This question may be a little bit off the wall, and I don't ask it in a pejorative sense, but I know that all of you are supplicants basically for more money, if you will, and I don't fault you for that. As one who believes we need to balance the budget, if I had to list the spending party, this would be very, very high on my list in terms of reconverting some funds that we have.

But I was just wondering in your wanderings and dealing with this problem—and you may not have a ready answer to this—you may have already said it, and if you already have, it is already in the record and then don't worry about it—but have you discovered other ways of helping with the funding? I know that this is a huge problem, and I know that you need major contributions from the Federal, state, local government in user levels, but there are a number of things—longer term loans or other financing methods, the mix in terms of the percentages contributed by everybody, perhaps less expensive construction—Mr. Dorfman may know something about that—to the fee structures, any kind of cost savings that go into it. Is there anything out there that would be helpful in

sharing with everybody else, which you probably do in your various groups if I had to guess, which would reduce some of the overall costs of dealing with this particular problem?

Ms. MARGERUM. I think we have all talked about the fact that we have raised our fees to our customers, and the user fees are going up at a very high rate. We are all, obviously, trying to cut costs. Energy is a big problem, and some of the public utilities are offering rebates for buying more efficient motors and pumps. So there is some cost saving there. But I am afraid that all the costs are really being driven by the mandates and the regulations and that we perhaps could get at some of the problems of deterioration if we could have a little more relief from the mandates and the regulations until we can get caught up. And that isn't to mean that we should continue to pollute but that we should at least not impose any more mandates and especially if it is not appropriate to our watershed which is, I think, a very good approach. But the cost of all this equipment is really very, very high.

Mr. SPENCER. One of the components of Mr. Studds's proposal here is to give EPA or at least place into the Water Quality Act some broader authority to deal with more flexible financing mechanisms. And I think if you looked at where a lot of the costs are in building these capital facilities and particularly the cities that are having to finance them through the municipal bond market, you see a pretty hefty impact on the rates just from some of the financing elements there. The cost to financing, the coverage requirements, and so on are pretty large, and I think there may be some fruit in that area to help out communities.

I know that one of the things that makes the SRF program real attractive to many communities in our state is that they don't have to provide the coverage requirement which says that you have to have a rate equal to paying, you know, 25 to 40 percent more than the debt service directly. So there may be some fruit in that area for some innovations, but we have yet to find any other magic to cover these costs.

Mr. DORFMAN. One of the new technologies is rehabilitation of sewer systems, and we find in our industry at least that you are getting more bang for the buck as it were, and this doesn't address, for example, combined sewage overflows, but it does address deteriorating, decaying, and leaking sewer systems that would take a plastic liner, for example, of some sort. And that certainly is impacting the construction costs.

Mr. HART. And to follow up on that, we could use a lot more funds just directed to cutting down on the inflow and infiltration into the sewer lines as opposed to building new plants to handle the flow. I mean, those projects normally fall in a lower priority because they are not as large and they are not as costly as the bigger problems.

In going to a watershed program, hopefully it will get us to a point where in a specific water body we will be able to make the decision that perhaps some of the different discharges could get together and fund an upgrade of one or two of the other discharges as opposed to going along and doing individual upgrades of each plant. I think that could also lend to spreading the financing around.

Mr. CASTLE. My time is up, but if I could just say, I congratulate you, Mr. Dorfman. I thought that was an artery leading to the heart behind you. Mr. Chairman thought it was a planet, but what it is is something which shows us in a very real sense the problems with sewer and wastewater treatment piping in this country. And I think it makes an impact. This is, frankly, I think a problem that the public doesn't really perceive. You can talk about the homeless or whatever, and it is so evident. This is just a problem that people don't perceive, and yet it is a tremendous and very real problem in this country. Any PR ideas, gimmicks that you have I would encourage you to bring along, and also—I am sure this has been said before—any kind of mandates or regulations which are of concern to you, I would hope all of your different groups would rank those and let us know about them. I am sure you are probably already doing that, but this might be a good year in which to really do that and put a price tag next to it. It is helpful for me if I know something is going to save, you know, tens of millions of dollars, I might be inclined to take a much closer look at it than I would otherwise. So that is very helpful information to have, I think. Thank you, Mr. Chairman.

Mr. STUDDS. I thank the gentleman.

Ms. MARGERUM. The city of Columbus, Ohio, has done that, and they have prepared a statement of what the cost of all the environmental mandates are, and I don't have that figure right now, but it is in the billions. \$1.6 billion is their cost that they estimate the environmental mandates on the city of Columbus, Ohio.

Mr. CASTLE. That is good. That is one less tax we would have to pass if we could get that money back.

Mr. STUDDS. I trust they will get that to their representative. Thank you, sir. The long-suffering gentleman from New Jersey.

Mr. PALLONE. Thank you, Mr. Chairman. I know the topic today is funding so I am going to try to stick to that, but I do feel that one of the most important issues facing us with this reauthorizing of the Clean Water Act is the issue of enforcement and inspection. And one of the things that I hope to accomplish is to get—and this is particularly directed to Mr. Hart—is to get some of the provisions that we have introduced in our state law under the Rubric of the Clean Water Enforcement Act enacted into Federal law this year during the reauthorization process. And I have introduced a bill that is called basically the same thing, "Clean Water Enforcement Act," with the idea of having mandatory penalties, more independent inspection, citizen action suits, very much really modeled after the New Jersey Clean Water Enforcement Act.

One of the provisions—and, you know, today is not probably the time to talk about that because we are talking about funding—but there is part of the New Jersey Clean Water Enforcement Act and also part of the Federal bill that I have introduced a provision for a clean water trust fund with the idea being that the penalties that come in from violations of permits would be used to finance improved enforcement and inspection by the DEP and on the Federal level of the EPA. That is a different concept from the Chairman's concept of polluter pays, but because we are actually talking about penalties now, you know, after the law—those who have actually violated the law, but I was going to ask, if Mr. Hart could comment

on it, whether or not there might be the potential for the money from those penalties to be used—you know, given, again, the model of the state—for some construction projects as opposed to just being used for enforcement or inspection measures? I mean, are you getting money in on a state level? Do you foresee the expansion of that trust fund, you know, for that type of purpose?

Mr. HART. We have been operating for two years now under the Clean Water Enforcement Act, and this year because of one large penalty, we will probably bring in about \$18 million of penalties out of the Clean Water Enforcement. Those moneys are going to directly managing the enforcement and associated programs that go along with that. Projected next year, the level will probably be about \$10 million. Then they will start going down a little bit after that—will probably level off at something less than that.

Mr. PALLONE. So you feel that that money really would need to be used for enforcement purposes. It is not the type of thing that could be leveraged for construction?

Mr. HART. Part of it might be, but because of the way our budget is structured, 85 percent of it comes from fees and fines and grants that is basically all going mostly toward just the operating expenses of the program.

Mr. PALLONE. OK. Well, I just thought it would be something that we could look into as we proceed through all this. The other thing I wanted to ask, and, again, I am asking Mr. Hart, but, you know, if somebody else wants to chime in, that is fine, but they are kind of specifically directed to New Jersey—there was mention made—you know, I have to apologize because I came late so I didn't even hear the testimony, but I ready your statement—there was mention made earlier about combined sewer overflow, the need, you know, perhaps to separate systems or to correct some of those problems.

You know, we have what I call temporary solutions like holding tanks or screening devices or things that can be put into place absent or short of actually separating systems. To what extent are you using money, you know, with the Wastewater Treatment Trust or Federal dollars that are coming in and being leveraged for those types of things as opposed to, you know, just for new construction? And I am just wondering—I mean, obviously, I feel and I am sure a lot of people do here that it is important that those types of functions be included in any kind of infrastructure program, and I was just wondering to what extent that is happening in the state?

Mr. HART. We have funded some of those projects. I don't know the particular dollar amount. We funded some of those smaller ones to shut off the CSO entirely. A lot of the funding goes to rebuilding the CSO so that it works even, and I do have a list of our future projections that I could provide the committee that shows all the particular projects broken down by type CSO—

Mr. PALLONE. Well, I appreciate—

Mr. HART [continuing]. with the dollar amount associated with each one of those.

Mr. PALLONE. All right. I would appreciate if we could get that through the Chairman, and I think it is important that we stress those things in terms of funding. Last question because, obviously, I am running out of time here, grants versus loans were talked

about a lot today. My understanding is that there really isn't, for all practical purposes, much of a grant program anymore. Do you see that as severely inhibiting new constructions in New Jersey, or do you think that the loan and the leveraging of the loans is really the way to go?

Mr. HART. I think it is inhibiting new construction for the small municipalities that can't afford just to get the original grant money—I mean, the original loan money. And we would encourage along with the ASIWPCA group that some money be set aside for grants just to finance the principal amount of the loan so that small communities have the ability—you know, they could pay off the interest of it, but at least they would be able to play the game, and right now they just can't even afford to even go through the expense of even looking to how much the project would cost.

Mr. PALLONE. And you would do that basically on sort of an ability to pay or the smallness, whatever?

Mr. HART. Yes. The size of facility, the rate base, things of that nature.

Mr. PALLONE. OK. Thank you very much. Thank you, Mr. Chairman.

Mr. STUDDS. Thank you, sir. I want to just close with one observation and one invitation. It is instructive, as I said at the outside, the number of people who were here this morning and also the number of members of the committee who were here this morning. This is an unusual attendance for the House in session. I think it testifies to the degree to which the importance of this subject is appreciated by folks. And I, in turn, appreciate the general statements of support we have had, but those of you who are in the business know that it is very difficult to build a wastewater treatment system with a general statement of support. Our only chance is if those who care and know most about this come together behind a very specific set of proposals. We have to do that in a very timely fashion.

I would like to invite you and those you represent or those who would represent you to a meeting as early as next week if we can establish a working group at which I will attend personally and then leave in the hands of staff to get a crash effort to get behind an alternative funding proposal. I want to be able in the very near future to take such a proposal with the support as broad as we can possibly muster—myself, the leadership of the Congress—to the new Administrator of the EPA, to the Director of OMB, and to the President himself. I think this rises to that level of consequence and of significance, and I think, as I said at the outset, that this is our window of opportunity, if you will, to begin an initiative of this magnitude and this importance.

We really don't have any option, whether we live in Quincy or wherever—Seattle. This is something the country has to do, and we, I think, would be delinquent in our responsibilities if we didn't give it everything we have in terms of an effort to develop a coherent, logical, and supportable proposal. So we are going to try to get that group together as early as next week. Any members on either side of the aisle are welcome to join us, and let me just repeat it. I think time is of the essence. I really appreciate the patience and the attendance of everyone here. We look forward to working with

you in the very, very near future, and the subcommittee stands adjourned.

[Whereupon, at 12:25 p.m., the subcommittee was adjourned, and the following was submitted for the record:]

ONE HUNDRED THIRD CONGRESS

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MEMORANDUM

TO: Members
 Subcommittee on Environment and Natural Resources

FROM: Subcommittee Staff

DATE: February 12, 1993

SUBJECT: Hearing on Clean Water Funding

On Thursday, February 18, at 10:00AM, the Subcommittee on Environment and Natural Resources will conduct a hearing on national needs for funding clean water infrastructure and proposals to meet those needs. Witnesses will include representatives from the Environmental Protection Agency; the National League of Cities; the Association of State and Interstate Water Pollution Control Administrators; the Association of Metropolitan Sewerage Agencies; the National Utility Contractors; and local officials.

BACKGROUND

Through the Clean Water Act (CWA), the Federal Government mandates that states address water pollution control through construction of wastewater treatment facilities. In 1988, the Safe Drinking Water Act added new federal requirements for construction of filtration plants to ensure the quality of drinking water supplies. Compliance with these two federal mandates requires enormous financial commitments. Historically, federal, state, local and private entities have shared the financial burden of the CWA requirements. There has been no federal assistance for the Safe Drinking Water Act mandates so far. In recent years, as the financial needs have continued to burgeon, the available resources have been diminishing. The result of our generally inadequate federal investment in clean water infrastructure is a continually degrading environment, stifling of economic growth and productivity and loss of employment opportunities.

CLEAN WATER FUNDING NEEDS

The U.S. Environmental Protection Agency (EPA) provides Congress with a biennial assessment of the cost of constructing all publicly owned wastewater treatment works necessary to meet the goals of the CWA. The latest report, from 1990, discusses long-term national needs for clean water financing. Also, EPA and the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) recently conducted surveys to determine short-term funding needs for clean water infrastructure.

Short-term clean water infrastructure needs have been surveyed to provide information to the Clinton Administration for development of the President's economic stimulus package. Both the EPA and ASIWPCA surveys have concentrated on projects that are beyond the design stage and are "ready-to-go". EPA's assessment of needs for clean water infrastructure projects ready for construction during the next 12 months is \$25.9 billion. This includes \$11.9 billion for wastewater, and \$14.0 billion for drinking water projects.

ASIWPCA conducted a survey of the 50 states for information on wastewater projects ready to proceed that will not be funded during 1993 unless additional dollars are made available. Forty states responded to their survey and reported over \$8.5 billion in needs. From that data, it extrapolated the need for all fifty states to be over \$10 billion. ASIWPCA did not assess drinking water needs, so this figure is roughly equivalent to EPA's wastewater needs estimate of \$11.9 billion.

Long-term needs are more difficult to gauge precisely, but by any standard, are substantial. EPA's 1990 Needs Survey (updated in 1991) reports that the total, 20-year design needs for wastewater construction are \$111.5 billion. This does not include water supply projects or a complete assessment of the need associated with combined sewer overflows (CSO), or stormwater and nonpoint source controls. ASIWPCA has documented long-term wastewater needs of \$130 billion. Like EPA, this total does not reflect a complete assessment of CSO, stormwater, or nonpoint source needs by every state. If anticipated CSO needs are included, ASIWPCA projects long-term wastewater needs of over \$200 billion. Long-term assessments are not available for water supply projects necessary to comply with the Safe Drinking Water Act.

FUNDING HISTORY

Since 1972, with passage of the CWA, the Federal Government has appropriated \$60.4 billion to assist states and localities in the construction of wastewater infrastructure (as noted on attached table). From 1973 to 1987, under Title II of the CWA, all

federal funding was passed to municipalities in the form of discreet grants for construction. The 1987 CWA reauthorization phased out the construction grants program and replaced it with a program of state operated loan programs to fund clean water projects called State Revolving Loan Funds (SRF). These are authorized under Title VI. The authorization for Title II construction grants expired in 1990 and the authorization for Title VI phases down to zero by 1994.

Unlike the construction grants program under which EPA provided grant assistance directly to municipalities for wastewater treatment projects, the SRF program is designed to give individual states the responsibility for developing and operating their own revolving loan programs. This includes providing financial assistance for construction of Publicly Owned Treatment Works (POTW) and other eligible activities. Financial assistance provided by SRFs can include loans and various forms of credit enhancements, but not grants. A key element of SRFs is their "revolving" nature--most disbursements return to the program to provide assistance to additional recipients. SRF assistance can be used for a broader range of water quality management activities than construction grant assistance, such as the implementation of nonpoint source management programs and the development and implementation of comprehensive conservation and management plans under the National Estuary Program. There is, however, a prescribed hierarchy of project types for which these funds can be used. Secondary treatment plants for municipal wastewater are the top priority. Combined sewer overflows, stormwater problems and nonpoint source controls are delegated a lower priority and restricted to a certain percentage of these funds. EPA cooperates with and provides technical assistance to states in establishing their SRF programs.

Currently, SRF capitalization grants are the only authorized federal funding of clean water projects under CWA. SRF programs have been established in all 50 states. Sophisticated financing mechanisms like leveraging of the SRFs has provided some states with additional dollars to invest in clean water infrastructure. Sometimes this can double or triple the amount of money the state has available to invest in projects.

Attached is a table of federal authorizations, appropriations and outlays for wastewater treatment grants since 1973.

CLEAN WATER INFRASTRUCTURE AND THE ECONOMY

Apogee Research, an independent private consulting firm, has prepared two reports on water infrastructure investment. They are, "A Report on Clean Water Investment and Job Creation," and "America's Environmental Infrastructure: A Water and Wastewater Investment Study". These reports provide extensive information

on the effects of investment in water infrastructure on the economy, jobs and productivity. Together these reports support the arguments that an increase in federal funding would create jobs, increase private sector profitability, increase labor productivity, increase private investment and possibly expand the tax base.

Apogee has analyzed a number of recent public works studies on various sectors, and their research indicates that every \$1 billion invested in water infrastructure generates from 34,200 to 57,400 jobs. This number includes direct, indirect and induced jobs. The direct jobs are jobs for people in the construction industry.

Indirect jobs are also high wage jobs of support sectors such as pipe manufacturers, material suppliers, manufacturers of construction machinery, engineers, and design consultants. Also, agency jobs for inspectors and administrators are generated by water investment.

Induced jobs are jobs that are created because the infrastructure is in place. Communities can expand when they have better access to water supply or more capacity for wastewater disposal. More houses can be built. All the attendant services demanded by larger populations can be established. Jobs in virtually every sector in every locality are dependant on adequate water supply and disposal capacity in the area. Attached is a letter from Somerset County, New Jersey, listing the development projects stalled due to a moratorium on building until wastewater treatment in the area could be upgraded. This letter shows that \$300 million in private investment was halted due to the need for \$35 million in clean water infrastructure.

There is a direct link between water infrastructure and economic productivity. Infrastructure must be in place as a precondition for housing, consumer services and industrial and agricultural production. Therefore, long-term return on this investment is an increase in private profitability, labor productivity and investment in plants and equipment. As a result, the whole economy is strengthened and the tax base may expand.

Finally, water quality improvements provided by clean water infrastructure assures public health and environmental benefits that cannot be quantified. Water that is safe to drink, and surface water that is fishable and swimmable add substantially to the quality of life nationwide.

The Federal Government, through the CWA and the Safe Drinking Water Act, has imposed mandatory requirements on local governments which translate into the need for billions of dollars in capital investment. This investment is crucial to the

protection of the environment, fisheries and wildlife. It is also necessary to support a growing and sustainable economy. This hearing will assess the need for additional federal funding and explore ways to generate additional dollars and get those dollars to needy communities.

ISSUES

Outstanding issues regarding federal funding for clean water needs include questions on the appropriate funding vehicle, where should the money come from, how much is enough and what activities should be eligible for assistance.

Questions on the funding vehicle weigh the advantages and disadvantages of grants versus loans. Some groups think that construction grants were a better vehicle for channeling federal funds to clean water projects. Congress must analyze whether to continue to use SRFs, return to construction grants or use some combination of both to provide states with federal funds. Currently, money for SRFs is allocated to states by a formula which some believe should be revised. Certain states use leveraging to make their SRF loans go farther. Should Congress require states to leverage their funds?

How much money should the Federal Government provide to states to help meet their clean water needs? Will \$5 or \$6 billion be adequate to meet a potential \$200 billion need? States must currently provide a 20% state match to the federal funds allocated to their SRF. Because of tight state budgets, some states are unable to meet this requirement. If federal funding is increased should this matching requirement be waived or reduced? If money is provided through a short-term economic stimulus package to clean water infrastructure through the SRFs, should the match be waived? What about small communities that will never be able to raise the money to pay for expensive technological programs? Should there be special programs for hardship cases?

In light of the efforts to reduce the deficit, it will be difficult to provide additional appropriations from the General Treasury for clean water infrastructure so where do we find the money to help states meet their needs? Last year, Representative Studds authored a proposal to establish a series of "polluter pays" fees on products associated with water pollution. Fees would be assessed against toxic industrial discharges, on the active ingredients of pesticides and fertilizers and on consumer, commercial and industrial products that have been directly associated with water pollution. This program could produce \$6 billion in annual revenues that could be dedicated to clean water infrastructure. Polluter pays revenue could decrease the need for appropriations from the General Treasury and thereby also

offer deficit reduction. Are alternative sources of funding required to increase Federal support, and if so, what are the best alternatives?

A final issue to be analyzed in the context of clean water funding is what projects should be eligible for aid and whether the existing federally mandated hierarchy is appropriate. Construction grant money was dedicated to the construction of municipal wastewater treatment capital projects. The SRF money is more flexible and can be directed to some less traditional water pollution controls, but it is still restricted. Historically, the CWA has concentrated on municipal and industrial "point sources" of pollution to clean up our waterways. Should the eligibilities under the SRF program be expanded, and if so, how?

Attachments

ATTACHMENT #1
**FUNDING STATUS AND OUTLAYS FOR
 CWA WASTEWATER TREATMENT GRANTS PROGRAMS**
 (\$ IN MILLIONS)

Fiscal Year	Authorizations	Appropriations	Outlays
1973	5,000	2,000	684
1974	6,000	3,000	1,553
1975	7,000	4,000	1,938
1976 ¹	0	9,000	3,348
1977 ²	1,480	1,480	3,530
1978	4,500	4,500	3,187
1979	5,000	4,200	3,756
1980	5,000	2,520	4,343
1981	5,000	2,644	3,884
1982	2,400	2,400	3,756
1983	2,400	2,400	2,983
1984	2,400	2,400	2,983
1985	2,400	2,400	2,900
1986	2,400	1,800	3,113
1987	2,400	2,361	2,920
1988	2,400	2,304	2,514
1989	2,400	1,950 ³	2,350
1990	2,400	1,980 ⁴	2,290
1991	2,400	2,100 ⁵	2,389
1992	1,800	2,400 ⁶	2,202 est.
1993	1,200	2,550 ⁷	2,171 est.
1994	600		

Source: *Budget of the United States Government, Appendix*, various years.

¹ Includes Transition Quarter (July - September 1976).

² Includes \$480 million under Public Works Employment Act (P.L. 95-369).

³ \$68 million of this amount was earmarked for 4 specific projects. The remaining \$1,882 million was allocated 50-50 between Title II grants and Title VI/SRF grants.

⁴ \$45 million of this amount was earmarked for 3 specific projects. The remaining \$1,935 million was allocated 50-50 for Title II grants and Title VI/SRF grants.

⁵ \$52.2 million of this amount is earmarked for specific grants and special projects, leaving \$2,047.8 million for capitalization grants under the Title VI/SRF program.

⁶ \$451.5 million is earmarked for specific grants and special projects, leaving \$1,948.5 million for grants under the Title VI/SRF program.

⁷ \$624.5 million is earmarked for specific grants and special projects, leaving \$1,925 million for grants under the Title VI/SRF program.



ATTACHMENT #2
**UTILITY and TRANSPORTATION
 CONTRACTORS ASSOCIATION OF NEW JERSEY**

P.O. BOX 815, 150 AIRPORT ROAD, LAKEWOOD, NJ 08701 908-367-1500 FAX: 908-905-4051

ROBERT A BRIANT, SR.
 Executive Director

January 20, 1993

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Mr. William Harley
 NUCA
 4301 North Fairfax Drive
 Suite 360
 Arlington, VA 22203

Dear Bill:

Several years ago, the Somerset Raritan Valley Sewerage Authority expanded its wastewater treatment plant while also adding new technology to the system. Prior to the work being completed, its service area was placed under a moratorium for approximately 2 years.

Enclosed is a list of private work which was in various stages of development when the moratorium on construction was placed due to the need for work at the Somerset Raritan Valley Sewerage Authority wastewater plant. The approximately total value of this private work was \$300 million. The value of the public work to expand and improve the Somerset Raritan Valley Sewerage Authority plant was about \$35 million.

As you can see, the private economic value was nearly ten times the public input to this clean water project. Additional private work will also follow in the future. It is imperative that federal funding for this work continue in the future so that private investment in the economy can follow.

Sincerely,

Bob Briant
 ROBERT A. BRIANT, SR.
 Executive Director

RAB:gg

Enclosure

AFFILIATIONS —
 American Road & Transportation Builders Association
 National Utility Contractors Association

**PROJECTS IN SOMERSET COUNTY POTENTIALLY STALLED
BY NEW JERSEY DEPARTMENT OF ENVIRONMENTAL
PROTECTION SEWER MORATORIUM IMPOSED ON
SOMERSET RARITAN VALLEY SEWER AUTHORITY
(REVISION NO. 1)**

(NOTE: MORATORIUM PERIOD - 7/1/88 THROUGH 4/6/90)

<u>Review Date</u>	<u>Name</u>	<u>Project Description</u>
<u>Branchburg</u>		
10/88	Kingswood Village	49 Residential Units
2/89	Branchburg Municipal Building	16,450 Sq. Ft. Office
3/89	Branchburg Corporate Center	431,233 Sq. Ft. Office
3/89	Branchburg/202 Trade Center	623,680 Sq. Ft. Office/Warehouse
3/89	Cariboo Associates	118,919 Sq. Ft. Office/Warehouse
5/89	Branch Estates	24,000 Sq. Ft. Office
6/89	Medway Realty Associates	158,340 Sq. Ft. Office/Warehouse
6/89	Ralph L. Brass & Company	57,985 Sq. Ft. Office/Warehouse
9/89	Murray Corporate Center	87,778 Sq. Ft. Office
9/89	Timbers At Branchburg	34 Residential Units
10/89	Shannon Court	4 Residential Units
12/89	ShemIn Nurseries	22,361 Sq. Ft. Commercial
12/89	Conolog Corporation	38,838 Sq. Ft. Industrial

Branchburg Subtotals

87		Residential Units
22,361	Sq. Ft.	Commercial
559,461	Sq. Ft.	Office
958,924	Sq. Ft.	Office/Warehouse

<u>Review Date</u>	<u>Name</u>	<u>Project Description</u>
<u>Bridgewater</u>		
7/88	Black Tree Associates	6 Residential Units
8/88	Golden Meadows	16 Residential Units
10/88	Estates At Winslow Rise	20 Residential Units
11/88	Brown Road	4 Residential Units
11/88	Gateway Oldsmobile	18,200 Sq. Ft. Commercial
12/88	Village Tavern	2,668 Sq. Ft. Commercial
1/89	Milltown Road	75 Residential Units



**National
League
of
Cities**

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STATEMENT OF THE HONORABLE SONYA MARGERUM MAYOR OF WEST LAFAYETTE, INDIANA

on behalf of

THE NATIONAL LEAGUE OF CITIES

on

THE NATIONAL CLEAN WATER INVESTMENT CORPORATION

before the

HOUSE MERCHANT MARINE AND FISHERIES COMMITTEE

SUBCOMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

U. S. HOUSE OF REPRESENTATIVES

February 18, 1993

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Recycled Paper

Mr. Chairman, members of the Committee: I am Sonya Margerum, Mayor of West Lafayette, Indiana and vice chair of the National League of Cities Energy, Environment and Natural Resources Committee. I am here today to testify on behalf of NLC and the 16,000 cities and towns across the nation we represent on the critical municipal issue of financing for federal environmental mandates -- in particular, mandates affecting the nation's water supply.

Most especially, Mr. Chairman, we'd like to express our appreciation to you for your thoughtful efforts in devising alternative financing structures to assist in assuring all Americans access to clean and safe water supplies. We cannot overemphasize our agreement with you, that it is absolutely essential to develop and enact a "permanent solution to the clean water funding crisis." While we agree that a short term economic stimulus is necessary to reactivate our economy, the magnitude of the documented need to meet Clean Water and Safe Drinking Water Act mandates will also require a substantial and reliable long term commitment.

Results of a recent NLC survey indicate that more than half the 250 municipal respondents have "ready-to-go" projects dealing with water infrastructure. The needs -- many of which fall outside the allowable uses for current Clean Water Act funding -- range from rehabilitation or expansion of existing facilities to construction of new facilities or modifications to meet new federal environmental requirements for wastewater, Combined Sewer Overflows, stormwater management, and/or drinking water. Projects range in size from several hundred thousand dollars to well into the millions of dollars.

The city of West Lafayette serves an equivalent of 43,000 people and includes Purdue University. In order to comply with federal mandates as well as continuing to upgrade the plant, we will be asking all rate payers to sustain a 78 percent increase in sewer rates.

We are holding a public hearing tonight (Feb. 18, 1993) on the 20 year facility plan in order to qualify for Indiana SRF. Most cities in Indiana have combination sewers and the combined sewer overflow costs and remedies are extremely expensive. Every city has ready-to-go projects that enable us to meet economic growth opportunities, provide jobs and improve the water quality in Indiana rivers and streams.

In large measure in response to your initiatives of the past several years, NLC has examined and developed policy addressing many of the ideas you have put forward in your proposed National Clean Water Investment Corporation. I would like to focus my remarks principally on what the nation's local elected officials believe are the most appropriate and effective means to re-establish the federal-state-local partnership in financing national goals and objectives in attaining and maintaining our water programs. My testimony will highlight three major areas of concern to our

country's cities and towns:

- Types of Funding -- loans/grants
- Sources of Revenue
- Project Eligibility

● *TYPES OF FUNDING -- LOANS*

The National League of Cities continues to support the State Revolving Loan Fund (SRF), but as a supplement to, not a substitute for, grant assistance. While municipalities believe the loan program is an appropriate vehicle for non-municipal financial participation in funding national environmental mandates, overall, municipalities are significantly less than enamored of the SRF.

Loans -- at least as currently devised -- are not a viable funding mechanism for many communities. A loan, by its very nature, is repayable and for some communities, repayment is beyond their fiscal capacity. And, we believe it important to note, the inability to repay loans is neither unique nor exclusive to small communities. Many of the nation's large and medium sized cities face severe financial constraints, declining revenue bases, middle class outmigration, and increased federal intrusion in determinations about local financing priorities through costly, and in many cases, ill-conceived, mandatory requirements.

Other disincentives to use of the SRF are the myriad additional federal requirements that adhere to the use of federal funds -- Davis-Bacon prevailing wage requirements being one of the principal negatives. Many of our communities have indicated it is less costly to secure alternate financing for the construction of wastewater treatment facilities than to use SRF loans because of the additional costs of prevailing wage requirements.

● *TYPES OF FUNDING -- GRANTS*

NLC believes that without grant assistance as part of the federal commitment to helping meet the nation's environmental objectives, it is unlikely that municipalities will be able to comply with these mandates.

The previous administration recognized -- albeit in limited scope -- that the only way to attain the national commitment to secondary treatment [in the seven coastal cities], was by providing grants to expedite the process. There is little likelihood that cities, confronted with the magnitude of costs, will ever have the resources to complete even secondary treatment without grant assistance. And, EPA's \$110 billion estimate for secondary treatment does not include the costs municipalities face for CSO remediation, stormwater management, or federal requirements for drinking water.

NLC policy in fact, calls on Congress to restore grant funding to assist municipalities in progressing toward meeting the nation's clean water goals and

objectives. Cities should be eligible for grant or loan funds or any combination of loans or grants. The use of loans and/or grants should be tailored to the specific needs and capacity of each municipal applicant for federal assistance. We also think funding allocations to municipalities should take into account not only a municipality's ability to finance projects, but also past local efforts to address the problem. Our only constraint on these funds would be to prohibit the use of grant funds to repay loans from the SRF.

● SOURCES OF REVENUE

Increasingly, as municipalities search for innovative ways to comply with federal environmental mandates, we have begun to focus our attention on sources of pollution. For example, in the Chicago metropolitan area, communities required to reduce levels of air pollution are giving serious consideration to significantly increasing the cost of driving single occupancy vehicles to work to affect individual transportation choices. In our deliberations last year, we approved policy calling for economic incentives and cost internalization. Where applicable, we believe that the external -- including social and environmental -- costs of products should be attached to the product price as a means of curbing both point and non-point source pollution.

While we support a redirection of non-domestic spending priorities, we recognize -- given the deficit -- that it may not yield the resources we believe will be required to meet domestic priorities. Your proposal to levy fees and impose excise taxes on products that contribute to pollution of the nation's waters is long overdue. While it can be argued that such a proposal authorizes pollution, it can also be argued that it will not only affect consumer decisions, but also provide the resources to remediate pollution where there are limited or no alternatives.

Your proposal to impose fees on toxic industrial discharges does, however, cause municipalities some concern. It does not take into account other fiscal disparities or state or federally imposed revenue limitations on local governments. It carries the aspect of "robbing Peter to pay Paul." We do not believe the federal government should look to traditional or potential local sources of revenues to fund increased federal participation in financing federal water mandates.

What this proposal does not acknowledge is that regardless of the fiscal constraints currently existing at all levels of government, the ability of the federal and state governments to raise revenues is significantly broader than that of local governments.

States determine what and how much local governments can tax. Even the federal government has imposed constraints on how local governments can finance sewage treatment plant operation and maintenance costs. The federal Clean Water Act prohibits local governments from financing these costs from the property tax (deductible from federal income taxes) and mandates they be financed from user fees

(not deductible). No similar constraints are imposed on the states or the federal government. In addition, both the states and the federal government are capable of raising revenues more equitably than is possible for many local governments. We jealously guard our very limited sources of revenue and consider this part of the proposal problematical.

While the tax code is not within the jurisdiction of this committee, NLC also believes that it would provide substantial assistance to municipalities to remove current restrictions on the availability of federal tax incentives for public financing of environmental infrastructure. Such changes would increase capital available and reduce capital costs. That would expedite project construction, upgrading, repair and rehabilitation.

● **PROJECT ELIGIBILITY**

NLC specifically supports expanding the activities eligible for federal financial assistance under the Clean Water Act. We believe such funding should be available for all Clean Water Act mandates.

As an organization, however, NLC has not addressed the question of use of SRF or other potentially available Clean Water Act funding for Safe Drinking Water Act purposes. In general we believe that there should be no mandates without commensurate federal financial participation in meeting those mandates. If an issue is sufficiently important that we need uniform national standards, then it should also be sufficiently important to assure the financing to implement these requirements. Your proposal anticipates raising \$6 billion annually. While these funds are desperately needed, they barely would scratch the surface for meeting just Clean Water Act mandates.

Do municipalities need assistance in complying with Safe Drinking Water Act requirements? Absolutely! But we face daunting, unfunded federal mandates not only in the Clean Water Act's requirements for secondary treatment, CSO remediation and stormwater management and the Safe Drinking Water Act requirements -- many of which make absolutely no sense at the local level (e.g., repeated testing for contaminants that have never appeared in the local drinking water supply), but there are also RCRA mandates for solid waste disposal facilities; Superfund liability; Americans with Disabilities Act requirements; Fair Labor Standards Act costs, etc., etc., etc. We either need financial help for all of these programs, or prioritization, so we can rationally approach the tasks at hand, or the flexibility to address what are truly the problems at the local level.

Mr. Chairman, thank you for the opportunity to testify before you today. I would be pleased to answer any questions you may have.



A S I W P C A

Association of State and Interstate
Water Pollution Control Administrators
750 First St., NE, Suite 910, Washington, DC 20002
(202) 898-0905 • Fax (202) 898-0929

**Association of State and Interstate
Water Pollution Control Administrators (ASIWPCA)**

**CLEAN WATER ACT REAUTHORIZATION
RECOMMENDATIONS ON**

CLEAN WATER FINANCING

***Presented by Don Ostler, President
before the
U.S. House of Representatives
Merchant Marine and Fisheries Committee***

February 18, 1993

Mr. Chairman, my name is Don Ostler, Director of the Division of Water Quality, Utah Department of Environmental Quality. I am also the national President of the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA). I am joined here at the table by my colleague Mr. Dennis Hart, Administrator of Environmental Regulation, Wastewater Facilities Regulations Element, New Jersey Department of Environmental Protection and Energy, also a member of the ASIWPCA Board of Directors.

As you know, Mr. Chairman, the ASIWPCA is the national organization of State officials who implement the Clean Water Act on a daily basis. Our Association is committed to the environmental objectives set forth in the law, and we appreciate the opportunity to appear before you today to present the States' Clean Water perspective.

Tremendous strides have been made in the cleaning up and the protection of the environment. Since 1972 States have gained considerable experience in dealing with the serious water quality problems confronting the nation. We come before you today to share our experience and expertise. Our recommendations are premised on the following principles:

1. The Clean Water Act is fundamentally sound -- the largest impediments to the Clean Water Act goals are:
 - * The lack of adequate Federal funding and State flexibility in their use, as well as delays in providing funds that are appropriated.
 - * The need for adequate time to carry out the 1987 Water Quality Act Amendments. With lack of adequate funding and technical resources, coupled with delayed policy and regulatory guidance from USEPA, States find themselves behind the implementation schedules as dictated by Congress.
2. States must continue to have the lead role in program development and management.
3. New Federal mandates must be accompanied by increased State flexibility and adequate funding.
4. Existing resources need to be utilized more efficiently and effectively to assure the desired environmental results.
5. The need to define the continuing Federal funding role in infrastructure financing after 1994.

In furtherance of these principles, let me say at the outset that municipal pollution from treatment plants and runoff is a major nationwide pollution problem. The Association's recommendations on infrastructure financing do not require major changes in the Act, and yet our suggestions should significantly improve existing programs. The States are convinced that changes can be made surgically to resolve some very contentious issues currently before the Congress. Adequate funding and municipal compliance are among the highest priorities for State water administrators, specifically:

1. Full capitalization of the State Revolving Loan Fund to the \$18 Billion level.
2. Establishment of a post-1994 Federal funding role in infrastructure financing, at a \$5 billion annual appropriation. *[See attached letters to President Bill Clinton and to Senator Max Baucus, Chairman, Environment and Public Works Committee.]*
3. Program streamlining and refinement (e.g., the elimination of the majority of the Title II Construction Grants mandated requirements and application of other Federal legislation) to build the most projects in a reasonable time frame at a reasonable cost.
4. Assistance for hardship and/or small communities.
5. Enhanced funding for State implementation of existing Clean Water Act mandates.

I. INFRASTRUCTURE FINANCING

ASIWPCA supports the State Revolving Loan Fund (SRF) and recommends that all Clean Water infrastructure assistance be incorporated into its Title VI framework. Beyond question, it has been the most successful program under the 1987 Amendments. All States have SRFs. They are popular programs that are meeting "customer needs" much better than through the grant program. Projects are being built cheaper and 50% faster. Initiative in meeting compliance needs is rewarded, rather than delay. ASIWPCA does not support the re-creation of a national grants program for municipal wastewater treatment plant construction. However, to meet the clean water needs of the nation, there is no question that refinements are needed in the SRF, based on experience to date.

Under any scenario, Federal funds are limited. The question before us is how they can be used efficiently, effectively, and equitably to bring municipalities into compliance and assure they stay there. The SRF has the power to leverage 2-5 times the original Federal investment. The number of jobs, projected by the Committee in its fact sheet (\$57,400 for each billion dollars) is, therefore, conservative.

A. Traditional Needs

The covenant between Congress, the Administration and the States in the 1987 Act authorized \$18 Billion to capitalize the SRF for eligibilities documented at the time the Title II Construction Grant phase out was prescribed.

USEPA's Needs Survey at that time indicated about \$78 Billion in such needs. Most regrettably, Federal appropriations fell over \$1.7 Billion short of authorized levels by FY 1993.

Recommendation: To fully stimulate the economy, produce much needed jobs and enhance the nation's environment, Congress should provide at least \$2 Billion annually for the SRF program to meet basic 1972 Act requirements that are yet to be fulfilled.

B. New Requirements

The 1987 amendments also mandated substantial changes in water quality standards, toxics control, sludge management, stormwater regulation, and nonpoint source control. Rehabilitation of existing facilities are a special consideration, because facilities constructed in the early 1970s are reaching the end of their structural design life. Estuary protection and combined sewer overflow correction are also emerging as priorities.

\$34 Billion in needs to address these problems have been documented by the States in a recent ASIWPCA survey. We expect that, as these requirements work their way into more facility plans, the financial impact will be far greater. In all likelihood, the total wastewater treatment needs of this nation in the next 20 years under the 1987 Water Quality Act are over \$200 Billion. To make progress in addressing the needs within a reasonable time frame, the SRF will need to be capitalized well above the authorized \$18 Billion.

Recommendation: A minimum of \$3 Billion should be appropriated annually -- through the end of the century for new compliance needs. To adequately capitalize the entire program, therefore, a total annual appropriation of \$5 Billion is needed to meet expanded Clean Water Act eligibilities. Inclusion of water supply, as suggested by the Committee in its funding proposal, would require additional funding.

C. Title II

States worked diligently to involve communities in the State Revolving Loan Program. The resurgence of Title II funding will encourage communities to hold out for the possibility of a future grant rather than move ahead with a State loan. Compliance would be delayed, reinforcing the appearance that if a community puts off solving their problems long enough, the Federal government will come to their rescue. And, a new grants program will send the wrong message to those other cities and towns that moved forward to address their clean water responsibilities (e.g., penalizing those who acted swiftly to meet the requirements of the Clean Water Act). The SRF builds more projects for the Federal dollar at less cost, faster, because it is simple, revolves in perpetuity, and leverages other funding over 2-5 fold.

Recommendation: A Title II/grant program should not be re-established, especially for single interest or region-specific projects. The SRF should be the umbrella for municipal financing.

D. Small Community Assistance

A 1991 ASIWPCA survey indicates States track over 15,000 small communities under the Clean Water Act for wastewater needs.

- * Over one-third of SRF projects currently identified are for small communities (less than 10,000).
- * 49% of the 15,000 tracked will need wastewater construction over the next ten years with an estimated cost of more than \$10 Billion on a per capita basis.

Many small communities are financially capable, but in approximately half of the States, more than 50% of those needing construction cannot afford the debt service on an SRF loan covering all project costs. The smaller the community size, the less viable the SRF appears to be. Small communities can find themselves facing huge capital debt for clean water, without the financial and management resources and economies of scale to meet their public health and water quality needs. Low interest loans, alone, can not always make compliance affordable. ASIWPCA contends that communities of less than 3,500 population may require special attention.

Additional financial and technical assistance should be provided under an existing program administered by the States to assist these small and hardship areas. The nation does not need another competing Federally administered program -- small communities require "one stop shopping". Therefore, ASIWPCA recommends that the SRF be the umbrella for providing that assistance.

Recommendation: Title VI should be amended to provide a supplementary authorization in Title VI for small and/or hardship communities under which additional States should be authorized to:

- ☐ Blend funding grants as principle subsidies with SRF loans to achieve a target State means level of project affordability, i.e. negative interest rate.
- ☐ Make planning, design, construction, and acquisition of land/easements eligible.
- ☐ Exempt recipients from Title II and Federal "cross-cutter" (e.g. the Davis Bacon Act) requirements.
- ☐ Allow up to 40 years for loan repayment for projects less than \$10 Million.
- ☐ Provide flexibility to use a generous amount of administrative funds for State small and/or hardship community outreach and technical assistance.

Such an approach will meet small and/or hardship community needs without undermining the perpetual nature of the SRF program. By focusing on the objective -- affordable treatment -- equity is assured and program balkanization is avoided. Enhanced assistance could be triggered when sewer service charges exceed 150% of the average State charge, for example. The Farmers Home Administration program provides another model. Basing "hardship" on one standard, e.g. the national (vs. State) median household income, would over compensate communities in some States, while disqualifying hardship communities in other States. Careful consideration needs to be given State to State on community size, i.e., what is small in one State may not be in another.

E. General State Revolving Loan Fund Program Refinements

Congressional intent was clear in its encouragement for the States to establish SRF programs. We at ASIWPCA are delighted that all 50 States now have SRF programs in place. Much has been learned along the implementation trail. Based on the considerable experience gained in SRF administration and loan marketing, States recommend the following program enhancements to expedite and improve program performance:

- ☐ **Grant Payments** -- Federal capitalization grant payments should be in cash, as the 1987 Act intended. The current Letter of Credit diminishes the Fund's corpus, increases administrative costs, delays cash flow, and inhibits creative financing.
- ☐ **State Administrative Costs** -- As defined by USEPA attorneys, 4% of the capitalization grant is available for State program administration in that fiscal year, and no more regardless of the accumulated size of the SRF. Because capitalization grants are to end in 1994, so do any funds for administration (according to USEPA's interpretation). State legislators have embraced the SRF as a self contained program, so to now say, "we have been done in again," will cause the States and the Federal government serious credibility problems. For this reason, ASIWPCA recommends that the 4% administrative allowance be tied to the authorization (vs. appropriation) level, with a minimum of \$400,000 per State. No Federally imposed limit should apply to using loan repayments to States or other monies (e.g., bond proceeds) contributed to the fund.
- ☐ **Planning Setaside** -- The Act should clarify that the 40% Title II pass-through to local governments does not apply to Section 604(b) funds. This holdover makes no sense in a loan program.
- ☐ **Requirements** -- The Act should clarify that only requirements specified in their entirety in Title VI apply. The SRF can meet customer needs only by being competitive in the market place. Each Title II Federal requirement applied, for example, increases costs and construction time even though the funds must be repaid to the SRF.
 - * Cross-cutters: Cross-cutting laws, such as the Davis Bacon Act should not apply.
 - * Eligibilities: The SRF was created to fund projects broadly eligible under Sections 212, 319 and 320. Therefore, the Act should clarify that the 20% limitation in Title II on use of funds for collector sewers, rehabilitation, combined sewer overflows, etc., does not apply to the SRF.
- ☐ **Land Eligibility** -- The Act should be amended to make acquisition of land, easements and rights of way eligible.
- ☐ **Loan Amortization Period** -- States should have flexibility to extend the 20-year loan repayment period up to 30 years generally for hardship situations, and up to 40 years for financial hardship communities with projects less than \$10 Million. Just this one reform can make the SRF affordable in many more communities.
- ☐ **Federal Oversight** -- The Act should terminate USEPA/Inspector oversight of Intended Use Plans, annual reports, and audits in the loan program within a reasonable period after the last deposit of Federal money is made, as outlined below:

Intended Use Plan Review -- One year after last capitalization grant.

Annual Report -- One year after last deposit of Federal money.

Annual Review -- Two months after last annual report.

Annual Audit -- Two years after last deposit of Federal money.

- * Audits: The 1987 Water Quality Act requires audits as necessary, but USEPA mandates them annually at State expense. States should be able to use the Single Audit Act to satisfy the law. It is the accepted method of auditing to eliminate duplication and expand coverage of Federal dollars.

- Needs Survey -- A credible survey should be undertaken periodically of all municipal needs eligible for SRF financing under the 1987 Act, such as upgrades to meet water quality standards, sludge disposal, refurbishment of aging facilities, stormwater management, nonpoint source control and estuary management.
- Title II Closeout -- The Act should authorize States to use Title II de-obligations and reallocations in the SRF. Title VI administration funds should not be used to close-out the grants program, since they are already inadequate for long term SRF fund management.

II. STATE MANAGEMENT ASSISTANCE

A. State Capacity Building -- (Section 106)

State implementation of the Clean Water Act is drastically under-funded. When one considers the rate of inflation, appropriations remain at the 1970 level. And, as every member of this Subcommittee knows full well, program mandates have increased exponentially. A recent ASIWPCA survey documented funding needs as follows:

Cost of Operating the Clean Water Act Framework	\$475 Million
Additional Costs of Implementing 1987 Amendment Programs	230
TOTAL CLEAN WATER ACT PROGRAM COST	705
Estimated Funds Available <i>[Federal, State, other]</i>	300

FY93 Shortfall

\$405 Million

These are conservative estimates. Additional requirements or "costing out" USEPA regulations (e.g. stormwater) would add significantly to the total.

USEPA's practice of setting aside significant funds for what they consider to be "special projects" exacerbates an already untenable situation. It takes several years to develop programs and staff for emerging priorities, e.g. stormwater. One time projects cannot build State program and technical capability. We suggest that Congress take a comprehensive look at consolidating new and old entitlement grants/setasides into Section 106. Each grant (15 in FY 1991) has separate matching, eligibility, work plan, application and reporting requirements. The duplication and transactional costs divert much needed resources away from clean water goals. The balkanization delays funding often until the last fiscal quarter, and impedes State ability to address priority problems from a comprehensive perspective, prevent pollution, reduce risks, and achieve environmental results.

Recommendations:

- 1) The Section 106 authorization should be increased to \$145 Million with a statutory allotment formula,
- 2) The program should be advance funded or requirements should be placed on USEPA to make grants to the States within 30 days of apportionment,
- 3) 106 should be recognized in the law as the framework for providing funds to the States for implementing Clean Water Act requirements, and

- 4) A single State/USEPA negotiation process, with its associated accountability requirements, should be created as the mechanism to address Congressional priorities.

B. Fees

The reauthorization should consider innovative funding for State management to further close the funding gap, including a discharge permit fee system. Certain tenets must apply:

- ☐ States should be authorized to collect the fees. Funds should not flow through the Federal government with its bureaucratic vagaries and unpredictability.
- ☐ Fees collected should be considered State monies for use as needed to carry out the Clean Water Act and only the Clean Water Act.
- ☐ The current level of effort from State general revenues should be maintained.

Fee programs can be very helpful, but can also carry with them unwanted negative baggage (e.g., the loss of State legislative funding and political support). Such negative impacts must be minimized. Fee systems should be designed carefully, based on credible, readily available data, specifically to fund NPDES program administration. They are a cumbersome tool for achieving other Clean Water objectives. In addition, any fee system should recognize that municipalities, as the principal payer, are financially stressed. Local entities operating pretreatment programs should be able to assess administrative fees.

C. Nonpoint Source (NPS) and Lake Management

NPS control should be viewed as a long term task, comparable to point source control, but requiring a much higher level of intergovernmental cooperation. Demonstration projects alone will not accomplish the needed water quality improvements. A stronger framework should be established in the law to implement NPS programs requiring:

- 1) Adequate Federal funding for NPS control and State management.
- 2) USEPA to increase public awareness, develop good science and regulatory/economic incentives, and issue guidance for evaluating State programs. The guidance should address source categories to cover, evaluation criteria, methods to estimate reductions in NPS loads, evidence of necessary local government authority/involvement, and critical habitat/ecosystem protection.
- 3) States to:
 - * Identify priority watersheds, set goals, and establish implementation mechanisms with schedules and a monitoring program in 30 months.
 - * Evaluate progress towards meeting water quality standards within 48 months after program approval.
 - * Update the program as needed to address water quality violations within 12 months after evaluation (and every 5 years thereafter).
- 4) Federal agency activities and programs to be consistent with State plans.

To achieve these objectives, more funds and more efficient delivery systems are needed. A 6-8 year period will be required to upgrade the effort and evaluate success. The present process of State work plan development and USEPA involvement project by project in carrying out approved 319 programs is not manageable as State programs mature and funding increases. State use of 319 funds should be solely based on a USEPA approved NPS implementation plan (NIP). Grants or loans distributed by States should be structured to require appropriate local commitment. The range of problems eligible should not change. However, the type of activities covered by grants for implementation should include, but not be limited to, the following: planning, assessment, demonstrations, enforcement, technical assistance, education and training. Institution of local programs should be eligible.

Recommendation: Current SRF eligibilities should be retained to allow for coverage of NPS projects. The Section 319 program should continue to cover NPS program implementation costs not reasonably addressed through the SRF. The long term State goal is to move the NPS program to a point where it can be integrated into Section 106 and SRF structures. In the interim, annually the following should be authorized under Section 319:

FY 1994-96, \$500 Million
FY 1997-98, \$1 Billion

A set distribution formula should be used for the States -- with no national setaside for "beauty contests" (i.e. competitive projects at the USEPA level).

The existing 40% match should be retained.

States should be able to use up to 20% or \$200,000, whichever is greater, to manage implementation, including developing the NIP and updating 319 plans. The setaside for USEPA administration should not exceed 5% of funds appropriated.

5. Clean Lakes -- The Clean Lakes Program has a key role in managing the nation's lakes for maximum beneficial use and enjoyment.

Recommendation: A level of support in the amount of \$10 Million annually will assure the minimum level necessary for progress in Section 314 lakes management.

SUMMARY

Mr. Chairman, you and this Committee have understood and worked for full funding for the water programs created under your jurisdiction. And yet, through the appropriations process, we are finding ourselves further and further behind the funding "eight ball." The financiers say there is no new money and that may well be so, because we have seen water funding go down to offset increases for the Air Act as well as other environmental programs. This raiding of the water budget must stop. Utilizing the reauthorization process, we must remind our nation that water is the substance of life, our most precious and most taken for granted natural resource. Water is also the ultimate sink for all the world's pollution load.

Mr. Chairman, members of the Committee, as we address Clean Water Act reauthorization, we look to you to help us increase the water budget to assure that government officials responsible for implementing this Clean Water Act can at least be on par with their colleagues in the other environmental media.

Thank you, Mr. Chairman, for your interest, your insight, and your leadership in the protection of our waters. We at ASIWPCA also extend our appreciation to your fine staff. Mr. Stelle, Ms. Polo, and Mr. Ashe have been most helpful, and we thank all of you for your hospitality.

**NATIONAL
GOVERNORS
ASSOCIATION**

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Governor of Colorado
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February 8, 1993

The President
The White House
Washington, D.C. 20500

Dear Mr. President:

During your meeting with the Governors on February 1, Mr. Panetta and Secretary Cisneros asked whether states were capable of creating jobs through the Intermodal Surface Transportation Efficiency Act (ISTEA) and the community development block grant program (CDBG) within the 60 to 90 day target of the proposed stimulus package. You said you believed that states could, based on your experience in Arkansas. We strongly agree.

Attached is a proposal that the Governors unanimously adopted on February 2. We are committed to projects that create jobs immediately while contributing to long-term productivity. Specific ready-to-go projects have been identified by the American Association of State Highway and Transportation Officials, the Association of State and Interstate Water Pollution Control Administrators, and the Council of State Community Development Agencies. This recent backup data is available if necessary.

States spent all their funding under the highway obligation ceiling last year, the current clean water funds meet a fraction of the immediate needs, and the state share of the community development block grant is one of the best federal-state-local programs today. We have completed state-by-state surveys in the last two weeks and have documented specific projects that are ready to go under ISTEA, CDBG, and clean water programs. Each benefits both state and local governments.

The critical issue is the connection of stimulus projects to long-term national productivity. The Governors are convinced that the existing programs of ISTEA, clean water, and CDBG are the best vehicles for immediate and sustained job creation.

If local impact is an issue, it is important to remember that 60 percent of ISTEA funds are either spent in urban areas or passed through to local governments, and all of the CDBG and clean water funds are passed through to local governments. However, the state role in the programs ensures that the funds go to rural communities and small cities, as well as central cities.

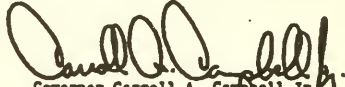
The President
February 8, 1993
Page two

We believe a stimulus program that includes increased funding for these existing programs can put people to work immediately on projects that create long-term prosperity.

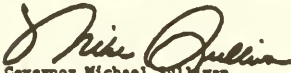
Sincerely,



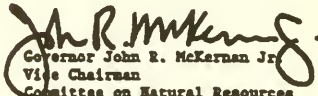
Governor Roy Romer
Chairman
National Governors' Association



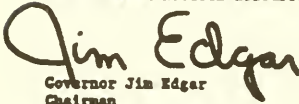
Governor Carroll A. Campbell Jr.
Vice Chairman
National Governors' Association



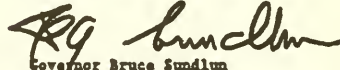
Governor Michael Sullivan
Chairman
Committee on Natural Resources



Governor John E. McKernan Jr.
Vice Chairman
Committee on Natural Resources



Governor Jim Edgar
Chairman
Committee on Economic
Development and Commerce



Governor Bruce Sundlun
Vice Chairman
Committee on Economic
Development and Commerce



Governor Bob Miller
Lead Governor for Transportation

cc: All Governors
Robert Rubin
Leon Panetta
Alice Rivlin
Secretary Cisneros
Secretary Pena
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bcc: Carol Rasco
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Washington Reps
NGA State Contacts

INFRASTRUCTURE INVESTMENT FOR THE 1990s

Developed by the:

National Governors' Association
National Conference of State Legislatures
American Association of State Highway and Transportation Officials
Association of State and Interstate Water Pollution Control Administrators
Council of State Community Development Agencies

January 15, 1993

INFRASTRUCTURE INVESTMENT FOR THE 1990s

January 15, 1993

INTRODUCTION

Background

Between 1948 and 1973, the growth in U.S. productivity averaged nearly 3 percent per year. In 1973, productivity growth declined dramatically, averaging just 1 percent per year since that time. This significant drop in productivity growth has resulted in a substantial decline in real wages and a stagnant standard of living for nearly two decades. (The reductions in the standard of living would have been greater had the number of two-wage earner families not increased dramatically.)

While the underlying causes of the slowdown in productivity are not entirely clear, there is substantial evidence to suggest that it has been caused, at least in part, by the decline in public and private investment over the last twenty years. To assist in increasing long-term productivity, we are recommending a modest increase in highway, transit, clean water, and other infrastructure of \$8 to \$10 billion per year over the next five years, as noted in the attached table.

This proposal is made within the context of significant deficit reduction. Funding would come from a shift in priorities toward long-term investments in America's future. This is a long-term proposal to increase public investment and productivity. While the intent is not to stimulate short-term growth, it could be modified to also be an effective short-term policy. If there is a short-term stimulus package, then these proposals are the ones most consistent with long-term growth. To ensure the rapid deployment of funds, some additional flexibility would be necessary, including a streamlined decision process, expanded eligibility for maintenance projects, and relaxed matching requirements.

This proposal was created as a joint project of the National Governors' Association, National Conference of State Legislatures, American Association of State Highway and Transportation Officials, Association of State and Interstate Water Pollution Control Administrators, and the Council of State Community Development Agencies. It is consistent with the existing policies of these organizations.

A Long-Term Policy

Recent studies clearly indicate that there is a need for more private investment in capital equipment and research and development. Also important is the need for increased public investment in education, training, infrastructure, and research and development. Among the most important components of public investment from the federal level is infrastructure. A host of analytical studies support the fact that increased, long-term commitments to infrastructure reap major returns in increased productivity, international competitiveness, and an enhanced living standard. The General Accounting Office recently indicated that net investment has declined sharply as a percent of gross national product from 9.8 percent in the 1960s to 6.0 percent today. This makes the United States last compared with the other twenty-four member nations of the Organization for Economic Cooperation and Development.

A Short-Term Policy

Increased infrastructure investment is an excellent long-term economic strategy, but it also can be an effective short-term stimulus. In the short term, financial support of the nation's infrastructure:

- utilizes existing programs and regulations to quickly create jobs;
- focuses support toward an industry that has a high unemployment rate;
- targets programs where state surveys indicate that a substantial number of projects are ready to go to construction;

- provides much needed funding support directly to state and local governments; and
- minimizes the short-term impact on the federal deficit.

Program Areas

The states' proposal for *Infrastructure Investment for the 1990s* focuses specifically on the major high-priority infrastructure programs:

- I. Intermodal Surface Transportation Efficiency Act (ISTEA)
- II. Clean Water State Revolving Loan Fund
- III. Community Development Block Grant

Immediate investment in these three programs will increase productivity and create jobs in the short and long term. The short-term outputs also will increase the long-term quality of American life. For example, transportation investment will reduce congestion and improve air quality across the nation. Similarly, investments in water and wastewater treatment systems and community development will enhance the health and environmental welfare of Americans, and at the same time, provide community revitalization.

L

INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT (ISTEA)

Program Description

ISTEA authorizes funding for roads and bridges, highway safety and transit programs, highways, and a part of the transit programs being financed out of the Highway Trust Fund, with flexibility to move substantial amounts of highway funding to transit.

The ISTEA authorization for fiscal 1993 for highways totaled \$20.4 billion, and for transit \$5.2 billion. Regrettably, Congress has appropriated only \$18.0 billion and \$3.8 billion, respectively. In addition, \$6.5 billion remains inaccessible due to obligation limits. It is estimated that at least 15 percent of highway program funding will be spent at the local level. The majority of the transit funding also will go to local governments and transit agencies. Depending upon flexibility decisions, more funding could be spent at the local level, since many state projects occur in urban and suburban areas.

The Specific Proposal

Fund ISTEA to at least its congressionally authorized levels, for both highways and transit, for the life of the legislation.

The Secretary of Transportation should fully, actively, and consistently implement the provisions of ISTEA that will produce quick preventive action to repair and restore transportation infrastructure. This action should assure eligibility for simple preservation projects, greater flexibility among program categories, streamlined decision processes, and relaxed matching requirements.

The provisions of ISTEA allow states to have 100 percent funding for highway projects in fiscal 1992 and fiscal 1993. A few states indicate possible matching problems in fiscal years 1994 to 1996, which could be resolved by extending current provisions. Some local governments and agencies might need a waiver on the match for transit.

Long-Term Needs

The Federal Highway Administration has documented federal-aid highway capital needs to be at least \$45.7 billion per annum to maintain 1989 conditions, and \$74.9 billion to significantly improve conditions to a reasonable level. By comparison, in 1991, the total capital investment by all levels of government was only \$36.2 billion. In transit, the Federal Transit Administration indicates a capital funding need of \$7.5 billion.

The states' capacity to use highway funding beyond the authorized levels of ISTEA was addressed in a December 1992 survey by the American Association of State Highway and Transportation Officials (AASHTO). The data collected indicate that some \$23 billion is needed above and beyond the authorized ISTEA levels.

Short-Term Needs

States and other intended recipients of ISTEA funds are prepared to put additional funding to immediate use. The AASHTO survey identified a state capacity to utilize at least \$8.5 billion in additional highway funding during fiscal 1993 over the \$18.1 billion provided, of which some \$3.5 billion would be utilized on labor-intensive rehabilitation projects that could move quickly. An American Public Transit Association survey of transit agencies and states found that they could utilize an additional \$7.2 billion in the next ten months.

II. CLEAN WATER STATE REVOLVING LOAN FUND

Program Description

The 1987 Clean Water Act revolutionized wastewater financing by eliminating the Construction Grant program and creating the State Revolving Loan Fund (SRF) to finance wastewater infrastructure in perpetuity. SRF, built with federal seed funding and a 20 percent state match, has been implemented in all fifty states, has been well accepted, and is hailed as a model for federal, state, and local cooperation. State-administered SRFs provide in perpetuity financing and expedited construction of environmental projects.

The act envisioned a six-year \$8.4 billion capitalization to be phased out in fiscal 1994. However, because of the effectiveness of SRF, Congress continues to fund the program — \$2.48 billion in fiscal 1993, with all funds going to locally sponsored projects and a subset of \$490 million in grants for eleven specific municipalities. Revolving at the state level, SRF has a "multiplier" effect that can leverage two to five times the original investment in construction through bonds and loan repayments. In contrast, 55 to 75 percent of federal matching grants discourage local initiative and often reward noncompliance.

The Specific Proposal

SRF should be authorized and appropriated at the \$5 billion level annually in fiscal years 1994 to 1997, as originally authorized for wastewater by the Clean Water Act of 1972. This amount does not reflect the \$10 billion in increased mandates under the 1987 act or inflation. Because SRF is unique in its ability to provide capital investment and jobs (e.g., \$5 billion generates up to 350,000 jobs annually and more than two to five times that investment in projects over time), the long-term benefits are particularly attractive in SRF. The authorized level for this program in 1980 was \$5 billion.

Short-Term Needs

To ensure immediate investment, states need:

- elimination of the match requirements for any supplemental appropriation;
- eligibility for purchase of land/easements;
- elimination of restrictions on funding collectors and combined sewer overflows;
- elimination of disbursement restrictions under the letter of credit;
- extended repayment periods and blended principal subsidies with loans for small hardship communities;
- elimination of limitations on refunding/refinancing and cash payments;
- elimination of funding for project-specific grants; and
- eligibility for water supply projects in states currently meeting Clean Water Act requirements.

The Association of State and Interstate Water Pollution Control Administrators has documented wastewater needs in excess of \$10 billion in projects able to move immediately to construction.

Long-Term Needs

States are encountering significant difficulty in providing a 20 percent match. To address this and related concerns, there is a need to:

- simplify federal requirements;
- provide broad flexibility to extend repayment periods;
- increase the administration allotment above the 4 percent of an annual appropriation; and
- enhance eligibilities, provided funds are available above the \$5 billion level.

The nation's wastewater treatment needs documented by the states and the U.S. Environmental Protection Agency (EPA) exceed \$130 billion. With the inclusion of unfunded congressional mandates from the 1987 Clean Water Act (e.g., stormwater, pretreatment, combined sewer overflow, and toxic controls), this figure will exceed \$200 billion. SRF, with its leveraging potential, offers the most effective national vehicle for addressing these needs.



ASI WPCA

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ADDITIONAL SRF FUNDS THAT COULD BE USED FOR PROJECTS DOCUMENTED AND READY TO GO
(For Currently Eligible Needs (Wastewater Plants, Interceptors, Collector Systems, Combined Sewer Overflows,
Stormwater or Nonpoint Source Control, etc.) — except where indicated by ¹⁹⁹⁷)
(\$ MILLIONS)

	1993	1994	TOTAL
ALABAMA	49	—	49
ALASKA*	67	63	126
ARKANSAS*	25	175	200
CALIFORNIA	371	385	756
COLORADO	19	200	219
CONNECTICUT	146	225	371
DELAWARE	90	42	132
FLORIDA	200	400	600
GEORGIA	95	40	135
IDAHO	19	21	40
ILLINOIS	214	—	214
IOWA*	20	20	40
KANSAS	3	20	23
LOUISIANA	16	17	33
MAINE	100	200	300
MARYLAND	—	317	317
MICHIGAN	41	100	141
MINNESOTA	16	173	189
MISSISSIPPI	26	15	41
MONTANA*	20	28	48
NEW HAMPSHIRE	57	120	177
NEW JERSEY	280	140	420
NEW MEXICO	20	12	32
NEW YORK	180	277	457
NORTH DAKOTA*	172	172	344
OHIO	122	100	222
OKLAHOMA	57	29	86
PENNSYLVANIA	128	33	161
RHODE ISLAND	29 + 45*	18 + 25*	47 + 70*
SOUTH CAROLINA	156	116	272
SOUTH DAKOTA	25	12	37
TENNESSEE	50	50	100
TEXAS	320	—	320
UTAH	—	22	22
VERMONT	8	18	26
VIRGINIA	200	300	500
WASHINGTON	790	197	987
WEST VIRGINIA	49	30	79
WISCONSIN	82	112	194
TOTAL: 49 STATES REPORTING	\$4,283	\$4,224	\$8,507

ESTIMATED TOTAL FOR 50 STATES AND THE TERRITORIES:

OVER \$10 BILLION

* These States do not have projects "ready to go" on SRF priority lists for traditionally eligible needs that could now use supplemental funds, but could use the funds indicated if they were able to eliminate Title II requirements and provide principal subsidies or zero interest loans for water supply or wastewater for small hardship communities or Native Tribes. NOTE: Rhode Island has projects in both categories. While the other States were not asked to provide such information, their ability to use funds in a like manner, if flexibility were allowed, could substantially increase the totals indicated above.

III. COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM

Program Description

The Community Development Block Grant (CDBG) program is the largest federal grant-in-aid program for a wide range of community development projects that primarily benefit low- and moderate-income people. Eligible activities include the acquisition, construction, reconstruction, and installation of local public works and related facilities such as water and wastewater treatment systems.

In 1992, Congress appropriated \$3.4 billion for the CDBG program. By statute, entitlement communities (cities with populations of at least 50,000) receive 70 percent of the appropriation and states receive 30 percent, which is passed on to local governments in nonentitlement areas (cities, counties, and towns with populations of less than 50,000.) More than half of state CDBG funds were invested in public facility projects in 1990, and of this amount, approximately one-third was invested in water, sewer, and flood control projects. While no state or local government match is required for project funds, states must provide a match for their administrative costs allowance. By statute, states are allowed to use only \$100,000 plus 2 percent of the annual allocation for administrative costs; the balance must be distributed to local government projects.

The Specific Proposal

Congress has appropriated \$4.0 billion for the CDBG program in 1993 and has authorized \$4.168 billion in 1994. We propose a supplemental appropriation of \$1.2 billion in 1993, to bring the total to \$5.2 billion. Congress should increase appropriations above the Congressional Budget Office baseline by \$1.4 billion in 1994, \$1.6 billion in 1995, \$1.8 billion in 1996, and \$2.0 billion in 1997.

The current CDBG delivery system has proven to be a cost-effective and efficient mechanism for the equitable distribution of public funds. The system can readily absorb the increased funding proposed because the delivery pipelines are in place. However, to increase efficiency and to maximize the program impact in the long term, some streamlining adjustments are needed. In the short term, adjustments are necessary to the supplemental appropriation to accelerate the distribution of funds to local governments. Waivers similar to those offered in Chairman Gonzalez's bill (H.R. 4073) are needed for CDBG to be an efficient economic stimulus mechanism.

Long-Term Needs

Based on EPA's 1988 Needs Survey, projected federal and state funding will cover only 35 percent of the community wastewater treatment needs in 46 states between 1988 and 1999. It is expected that states and local governments may have to generate the funds to fill this gap. Many small and rural communities are unable to repay even no-interest loans. Therefore, the availability of small and/or hardship community grants through the CDBG program is essential to enable rural communities to comply with environmental and public health mandates.

Short-Term Needs

Based on a 1993 survey by the Council of State Community Development Agencies, state CDBG program managers estimate that they could have spent more than twice their 1991 funding allocations on CDBG-eligible projects, most of which involve community infrastructure investment. This excess demand averages \$20.5 million per state, but runs as high as \$122 million in Michigan or more than 400 percent above the state's allocation. Demand for CDBG infrastructure grants is expected to increase in 1993 as state and local governments struggle to comply with the new set of requirements mandated by the Clean Water Act.

SELECTED INVESTMENTS FOR THE 1990s

	Actual 1992	Enacted 1993	Projected			
			1994	1995	1996	1997
ISTEA Highway						
Current/Baseline Spending	17.1	18.0	18.6	19.2	19.9	20.5
Proposed Increase		+ 4.1 ¹	+ 3.6	+ 2.9	+ 2.3	+ 1.6
Total Highway Spending	17.1	22.1 ¹	22.2	22.1	22.2	22.1
ISTEA Mass Transit						
Current/Baseline Spending	3.8	3.8	3.9	4.1	4.2	4.3
Proposed Increase		+ 1.3	+ 1.2	+ 1.1	+ 0.9	+ 2.9
Total Transit Spending	3.8	5.1 ²	5.1	5.1	5.1	7.3
Clean Water Revolving Loan Fund						
Current/Baseline Spending	2.4	2.5*	2.6	2.7	2.8	2.9
Proposed Increase		+ 3.0**	+ 2.6	+ 2.7	+ 2.8	+ 2.9
Total Funding	2.4	5.5 ³	5.2	5.3	5.5	5.7
Community Development Block Grants						
Current/Baseline Spending	3.4	4.0	4.1	4.3	4.4	4.6
Proposed Increase		+ 1.2	+ 1.4	+ 1.6	+ 1.8	+ 2.0
Total Funding	3.4	5.2	5.5	5.9	6.2	6.6
Total Infrastructure Spending						
Current/Baseline Spending	26.7	28.3	29.2	30.2	31.2	32.3
Proposed Increase		+ 9.6	+ 8.8	+ 8.2	+ 7.8	+ 9.4
Total Funding	26.7	37.9	38.0	38.5	39.0	41.7

NOTES: Baseline funding projections for 1994 through 1997 are based on the Congressional Budget Office's August "uncapped" baseline assumptions. Proposed funding increases are significantly less than required to meet recently documented needs.

1. Would require no additional spending authority to fully fund ISTEA as enacted, plus allow states to spend an additional \$1.3 billion per year in carryover spending authority.
 2. Authorized level in ISTEA as enacted, which is partially funded by the Highway Trust Fund.
 3. 1980 funding level.
- * Of the \$2.5 billion, an amount of \$500 million was specifically targeted to regional project grants. Thus a total of \$3 billion is needed to meet the requested \$5 billion authorization level.
- ** Existing SRF eligibility (excluding drinking water systems).

STATEMENT ON CLEAN WATER FUNDING

BY

DENNIS HART, NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

TO THE HOUSE SUBCOMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES

THURSDAY, FEBRUARY 18, 1993

Mr. Chairman and members of the Subcommittee, my name is Dennis Hart. I am the Assistant Director for Wastewater Facilities Regulation with the New Jersey Department of Environmental Protection and Energy. I would like to thank you for the opportunity to come before you today to discuss the issue of clean water related construction projects.

The NJDEPE is highly supportive of inclusion of wastewater treatment construction projects in any infrastructure and jobs bill which is developed in the near future. We feel that these projects will help the local and state economies not only through the jobs created through actual construction but also because of the ability of new or expanded plants to accommodate additional residential, commercial and industrial growth throughout the state.

The 1990 Needs Survey indicates that over \$4.4 billion worth of wastewater treatment improvements is needed in the State of New Jersey. Of these needs, almost \$0.5 billion could be considered current needs, or projects which will start construction by the end of 1994. A list of the specific projects can be provided. Another \$0.5 billion in needs are anticipated to begin construction by the end of 1997 for a total of \$1.0 billion in short-term needs for the state.

As I mentioned earlier, we feel that wastewater treatment projects will definitely be a stimulus to the local economy. Based on data developed by the New Jersey Wastewater Treatment Trust, it is estimated that for every \$100 million worth of construction, 3500 direct and 7000 indirect jobs are created for during the life of the project.

In addition, wastewater treatment expansions and improvements are sorely needed by the State's municipalities to allow for growth and development. The lack of adequate federal funding for clean water infrastructure projects significantly impacts economic productivity at the local level. In several areas of the state, wastewater facilities have been placed on sewer bans. These bans, which are placed on a system because of either treatment, conveyance or capacity deficiencies, severely limit the ability of a treatment plant to accept new flow from any sources. This, in combination with the fact that many municipalities have lines which may be over 100 years old, has hampered local economic activity. Sufficient federal funding for wastewater treatment projects will allow for sewer bans to be lifted and, consequently, local economies will be improved.

In the third question on your letter, you ask what would be the best method to provide this funding. The NJDEPE believes that the same results as an expanded construction grants program could be accomplished through modifications to a newly capitalized State Revolving Loan (SRF) Program. These modifications should provide some level of flexibility to the states and localities. For example, Section 603(d) of the Clean Water Act (CWA) allows states to provide

loans and other forms of financial assistance but not principal subsidy to local government units through its SRF Program. However, many small communities with serious wastewater treatment needs cannot even afford a low interest loan. The CWA should give states flexibility, allowing them to subsidize the principal loan amounts under the SRF Program for qualifying small communities.

Lastly, the DEPE is in the process of evaluating the "polluter pays" revenue generating fee program proposal and would like to submit to you in the very near future the results of our analysis. While we have long conceptually believed in a "polluter pays" principal, any new fees must be closely evaluated in the context of all the existing regulatory fees a facility must pay and the net benefits realized from imposition of a new fee.

Again, I thank you for the opportunity to appear before you today. I am available for any questions you may have.



ASSOCIATION OF METROPOLITAN SEWERAGE AGENCIES

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Statement of the
Association of Metropolitan Sewerage Agencies
before the
Subcommittee on
Environment and Natural Resources
of the
House Merchant Marine & Fisheries Committee
on
Clean Water Funding

February 18, 1993

Testimony provided by
John F. Spencer
Member, AMSA Board of Directors
Director
Water Pollution Control Department
Municipality of Metropolitan Seattle
Seattle, Washington

Dedicated to Environmental Improvement for Over 20 Years

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Mr. Chairman and members of the Subcommittee, I am John Spencer, Director of the Water Pollution Control Department of the Municipality of Metropolitan Seattle, otherwise known as Seattle Metro. I appear before you representing the Association of Metropolitan Sewerage Agencies (AMSA). AMSA's members represent nearly 150 of the nation's largest wastewater treatment agencies. We serve well over 90 million of the 176 million total sewer population in the United States, and collectively treat over 14 billion gallons of wastewater each day.

AMSA strongly supports the goals of the Clean Water Act and believes that as we look ahead to the next 20 years of clean water improvement, we must develop mechanisms that properly balance environmental gains and their costs. We must, above all, provide the money to make it all possible.

I am pleased to be here today to provide our perspective concerning clean water funding. We greatly appreciate the opportunity to share with you our thoughts and recommendations as environmental practitioners dedicated to improving the quality of the nation's waters. Through our testimony, AMSA will respond to the three specific questions you have posed, and provide our perspective regarding your proposal for a National Clean Water Investment Corporation.

INTRODUCTION

AMSA believes that the Clean Water Act's historic focus on technology-based standards and end-of-pipe treatment, framed by aggressive schedules for compliance and supported by significant federal funding, has achieved enormous reductions in the pollutants discharged to our nation's waters. These successes would have been impossible without one important ingredient -- the significant support provided through the Construction Grants Program.

Through the Construction Grants Program, federal, state and local monies provided the impetus to improve and protect our nation's waters. As a result, significant strides in the areas of secondary and advanced treatment, industrial pretreatment and coastal protection were made. Today our focus must shift to a more comprehensive approach addressing the control of costly, more complex and diverse sources of pollution. One thing, however, must not change. Continued federal funding of projects mandated by the Act is critical to the ultimate achievement of national water quality goals.

ESTIMATED SHORT & LONG TERM CLEAN WATER NEEDS

Last year AMSA published the results of a needs survey of its membership. Our report, which is attached to my testimony, is titled "The Cost of Clean." This report, and many others recently published, documents the fact that our water pollution control needs, as a nation, are considerable. Emerging needs such as combined sewer overflows, stormwater management, nutrient control, and nonpoint source control will clearly require

additional funds. The needs embodied in the requirements of the Safe Drinking Water Act will also impact our national economy.

In years past, environmental mandates have increased in both their number and cost, and federal financial support of the nation's clean water program has diminished. As a result, the nation's ratepayers have been asked time and time again, to pay an increasing share of this financial burden. Without a doubt, the price tag for ongoing water quality needs will continue to escalate. The question we must address as a nation is not only who will pay the cost of clean, but also how -- through what methods or mechanisms -- we will respond.

As reported in *The Cost of Clean*, the capital needs from 1990-1995 for 106 of AMSA's member agencies totaled \$22.6 billion. This number represents the needs of just over 100 local wastewater treatment agencies for the near term. It is important to note that, when extrapolated, the needs reported by AMSA correlate directly with the total national needs reported by both the Environmental Protection Agency and the Association of State and Interstate Water Pollution Control Administrators.

Operation and maintenance (O & M) expenses traditionally make up a higher percentage of a local agency's budget than capital costs and are paid for totally by local communities. In 1990 AMSA's members reported operation and maintenance expenses of \$4.84 billion annually. Based upon past surveys, we can project that O & M expenses will double every eight years, with increases between 9% and 11% per year. AMSA's projections of debt service and operation and maintenance needs for the 1990-2010 period indicate that high costs will not diminish in the future.

The increasing needs reported in *The Cost of Clean* translate directly into increasing burdens for local ratepayers. Through its research, AMSA has found that annual household user fees are now doubling every six years. Consequently, an average annual household user fee that was \$150 in 1990 can be expected to skyrocket to over \$1,600 in the year 2010. Clearly, this is not a problem faced only by Boston and a few other communities. Many other communities are now facing, or will soon face, the same fiscal challenge.

An additional perspective on this issue is provided by an analysis of service charge increases as compared to inflation (copy attached). AMSA's recently completed Service Charge Index reflects an increasing spread between annual increases in service charges (rates) and the rate of inflation reported by the Consumer Price Index. An analysis of the rates reported for the early years of the index and those reported recently reflects the shift in federal policy from the Construction Grants Program to the State Revolving Loan Fund Program. The resulting service charge index for 1992, as an example, exceeds the Consumer Price Index by a factor of three.

THE AFFECT OF INCREASED FEDERAL CLEAN WATER FUNDING ON JOBS, THE ECONOMY & ECONOMIC PRODUCTIVITY

The need for clean water investment to be a national priority is, I'm certain, nothing I need to convince you of Mr. Chairman. However, we must together ensure that the Administration, the Congress, and the nation as a whole, shares this critical perspective.

This morning you will hear from the National Utility Contractors Association (NUCA). Their March, 1992 report on "Clean Water Investment and Jobs Creation," analyzed prior studies to identify direct, indirect and induced jobs associated with water and wastewater investment. They found that for every \$1 billion dollars spent, a minimum of 34,200 jobs are created -- and possibly as many as 57,400. Additionally, the NUCA report found that the number of jobs generated directly by wastewater and water infrastructure projects is somewhat greater than the number generated by highway construction. When evaluating investment in clean water infrastructure we must not forget the long and short term environmental benefits that enhance ecosystem health and our quality of life, while at the same time stimulating the economy.

U.S Environmental Protection Agency (EPA) research has reflected similar results. The Agency cites a total of 58,500 jobs for every \$1 billion spent. A July 1992 *Forbes* article titled "You Can't Get There From Here," looks at the impact of the EPA on the U.S. economy. They found that compliance with pollution control regulations was costing Americans \$115 billion a year. This translated into every American paying, on average, \$450 more in taxes and higher prices -- or in other words, \$1,800 for a family of four which is equivalent to about one-half of its average expenditure on clothing and shoes. The article cites EPA's estimated 20 year design needs for public-owned treatment works as \$111.5 billion, with a corresponding jobs creation estimate of 3,814,468 to 6,402,060 jobs.

To provide some local perspective to this national priority, I'd like to provide a specific example from my area of country.

Metro Seattle serves the King County region, including Seattle, and is the largest sewerage agency in the four state area of Washington, Oregon, Idaho and Alaska, which comprises EPA Region 10. Metro operates four treatment plants which discharge to Puget Sound and serves more than 600 thousand customers.

In 1986 Metro embarked upon a \$1.7 billion capital program to upgrade to secondary treatment, reduce combined sewer overflows, and rehabilitate older sections of the system. Even with a strong state grant program, \$70 million in federal grants to coastal cities, and full utilization of the state revolving loan program, Metro's sewer rates have increased 67 percent since we began the program. Rates will increase another 65 percent between 1994 and 1997, for a total increase of 132 percent in the 11 year period.

These projects create long term, high paying jobs in the construction industry. For example, our largest single project is the upgrade and expansion of the West Point treatment plant. This is a five year, \$578 million project which is currently employing approximately 300 construction workers on site. When complete in 1995, the plant will employ an additional 50 permanent operator and maintenance employees.

As we meet here today, AMSA's members are in contact with their Congressional delegations -- urging support for a short term infrastructure stimulus package, reporting on specific local projects, and their accompanying jobs production and economic stimulus value, and describing their environmental benefits.

APPROPRIATE FUNDING METHODS -- EXPANDED CONSTRUCTION GRANTS vs STATE REVOLVING LOAN FUNDS

In the short term, and specifically within the context of any infrastructure investment initiative, AMSA believes that no less than one-third of the total of any infrastructure funding package should be directed to wastewater and water facilities construction. Additionally, AMSA identifies the funding source as nonmatching (100%) grants, recommends the modification of federal requirements to speed the commitment of funds and specifically focuses on "ready-to-go" projects.

You'll note our strong support for grants in the context of short term economic stimulus and jobs production efforts. In order for any initiative to have a true economic impact, access to federal funds must be immediate and unencumbered by the need to provide matching funds. Consequently, some traditional administrative requirements will need to be modified. To achieve our short term goals, more money from Washington is not enough. The path of those funds to identified eligible projects must be as direct as possible.

Our position with regard to long term funding needs continues to evolve. Within this context, AMSA supports both continued and increased capitalization of the State Revolving Loan Fund (SRF) Program through FY 1994 and into the future. Balanced with this support, we are compelled to strongly encourage Congressional review and assessment of the viability of the State Revolving Loan Funds to meet all future clean water needs. Your research Mr. Chairman, and the resulting proposal, clearly take the first important step in that direction.

AMSA is also reviewing the potential need for a federal funding program that includes a combination of loans and grants to effectively assist the nation's communities as they strive to meet mandated federal requirements. We also continue to be very concerned about the nation's failure to provide sufficient federal financial assistance for research and development for a sound, scientific basis in the development of a water quality-based pollution reduction strategy and to support state administrative costs and the development of comprehensive, site-specific, pollution reduction strategies.

AMSA is currently finalizing legislative language affecting the concept of comprehensive watershed management on a national scale. The time has come for us to move away from the command and control philosophies of the past and toward an approach that will conserve valuable resources at all levels of government while providing the tools necessary to address further improvements in the nation's water quality.

A PROPOSAL FOR A NATIONAL CLEAN WATER INVESTMENT CORPORATION

AMSA believes, as you do Mr. Chairman, that the nation must address both its short and long term infrastructure funding needs, and the need for resulting economic stimulus and growth.

AMSA supports a continuing and larger federal role in dedicating revenues specifically for water quality investments. From a public policy perspective, tying revenue sources for environmental programs to pollution sources (polluter pays) makes a lot of sense. This approach not only creates funding opportunities, it provides economic incentives to reduce pollution. Under existing revenue systems (taxes and user fees), the cost burden of clean water services falls on residences and businesses in ways that don't always encourage waste reduction and pollution control. The proposed approach draws a much closer connection between the problem and the funding source for fixing it.

You divide your proposal summary into sections assessing the problem and providing both short and long term solutions. AMSA fully supports your assertion that a federal investment of \$6 billion annually for water quality protection is required. We endorse your recommendation that the first year infrastructure proposal – appropriating an additional \$3.5 billion for clean water projects in 1993 – should serve as an important bridge to long term solutions. AMSA recently joined with several other state local and environmental organizations to urge President Clinton to take similar action.

In concept, your proposal that a greater share of water treatment costs should be shifted away from town and household coffers and onto the actual sources of pollution is a solid one. In particular, AMSA supports your recommendations with regard to disbursement of federal funds.

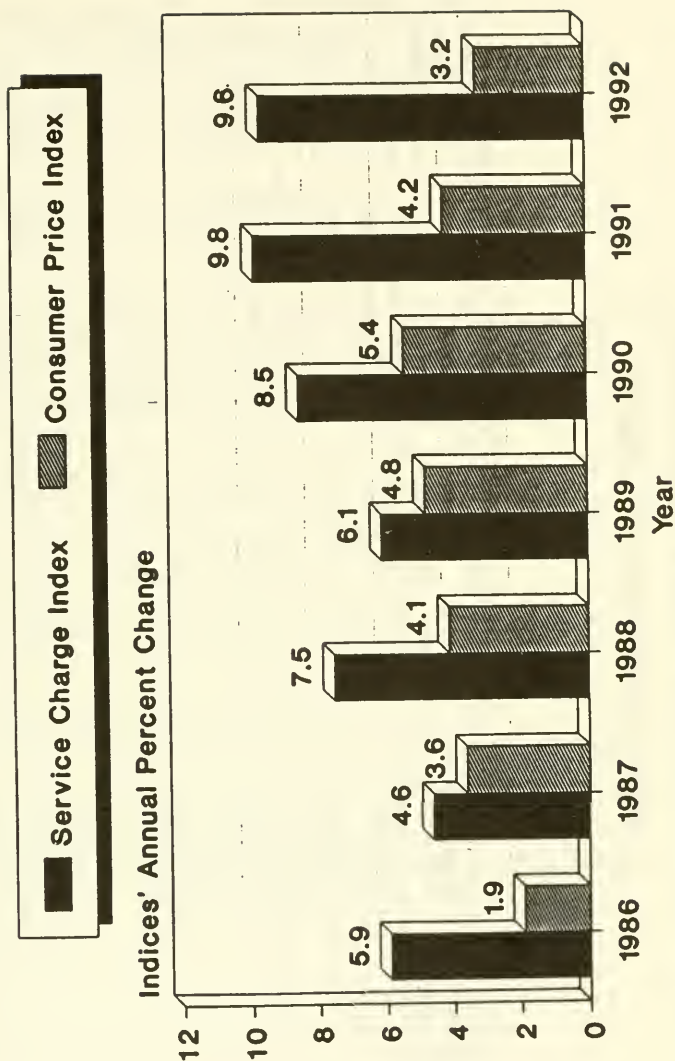
We fully agree that project eligibilities should be expanded to include a broader array of clean water needs. It is now time to expand SRF eligibility to combined sewer overflow control and stormwater management, and to consider other areas not traditionally part of the program. We must, however, recognize that program of expanded eligibilities will clearly require a much greater infusion of federal funds for continued progress to occur.

AMSA has a long-standing position supporting reassessment and revision to the SRF program. Your recommendation that the program be revamped to authorize a broader array of financing tools – including zero and negative interest loans – is one which we

fully support. While a formidable task, we also concur that a revision of the current allocation formula plays an important role in our fiscal clean water future.

AMSA looks forward to working with you, Mr. Chairman, and the Subcommittee, as you develop and refine your proposal. Thank you for providing us with the opportunity to testify. I will be happy to respond to any questions you may have.

Assn. of Metropolitan Sewerage Agencies SERVICE CHARGE INCREASES VS INFLATION



Note: Data from 124 AMSA Member Agencies

Association of Metropolitan Sewerage Agencies

SERVICE CHARGE INDEX SUMMARY

AMSA Service Charge Index (Base Year 1985 = 100)

EPA Region	Number of AMSA Agencies	Population Served	1985	1986	1987	1988	1989	1990	1991	1992	Percent Change
1	7	2,981,000	67.7	80.1	96.1	105.4	114.3	167.8	196.1	232.8	18.7
2	8	11,829,000	86.8	89.8	92.6	105.2	110.5	134.2	159.6	184.3	15.5
3	13	6,895,000	101.9	111.5	113.5	117.7	127.2	129.1	140.3	146.7	4.6
4	19	6,542,000	138.9	153.1	161.4	168.0	177.4	185.8	194.1	200.1	3.1
5	22	17,316,000	148.1	146.9	143.6	145.9	139.3	141.3	149.0	162.1	8.8
6	13	8,136,000	106.1	122.5	144.2	157.3	166.0	177.3	181.2	183.9	1.5
7	6	3,073,000	58.4	63.0	65.7	67.2	69.0	67.9	75.1	94.1	25.2
8	4	1,982,000	102.0	102.0	102.0	109.0	105.3	116.4	122.1	128.4	5.2
9	20	20,898,000	60.0	64.8	70.4	81.9	96.6	111.0	127.5	143.5	12.6
10	12	2,992,000	118.2	127.0	131.6	140.7	151.8	160.3	177.0	198.4	12.1
Total	124	82,644,000	100.0	105.9	110.8	119.1	126.4	137.2	150.6	165.0	9.6
Year-to-Year Percent Change				5.9	4.6	7.5	6.1	8.5	9.8	9.6	
Change in Consumer Price Index				1.9	3.6	4.1	4.8	5.4	4.2	3.2	

**Testimony of Gerald E. Dorfman
President-Elect
National Utility Contractors Association**

Before The

**Subcommittee on Environment and Natural Resources
Committee on Merchant Marine and Fisheries
U.S. House of Representatives**

**Hearing On Clean Water Infrastructure Funding
February 18, 1993**

Introduction

Mr. Chairman, my name is Gerry Dorfman, and I am delighted to participate in this hearing on behalf of the National Utility Contractors Association (NUCA). NUCA represents the thousands of men and women who construct clean water facilities or supply the equipment and materials for construction.

Before addressing the four specific questions put forth by the Subcommittee in its invitation, I am going to describe the appalling clean water infrastructure problem as I see it down in the trenches. The problem is appalling because we knowingly fail to confront it in a meaningful way, even though we have the capacity to do so and despite the fact that it affects the daily life of every American.

Utility contractors across the country expose decaying sewer lines, failed water systems, and combined overflows on a daily basis. Yet, most people are oblivious to the basic problem because it isn't glamorous or directly visible. Out of sight and out of mind in the absence of crisis, our underground pipelines crumble and state-of-the-art treatment plants languish on drawing boards while the need for new facilities and increased maintenance skyrockets.

I will describe problems in the Western states because that is where I work. Similar problems exist coast to coast.

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Decaying Sewer Lines

Our sewer systems are dangerously old, deteriorating, undersized, leaking, and inadequately maintained. In fact, they cannot be adequately maintained. How do you clean a sewer that is collapsing and filled with the rubble of its own bricks? How does the cleaning machine get through tree roots that collect debris and form dams? They don't. There are thousands of miles of sewer pipelines that are barely functioning. You cannot see the millions of gallons of sewage that escape daily and contaminate our underground aquifers. Unlike the pothole on a highway that jars you into demanding action, the failing sewer system is insidious in its silent destruction of our water supply -- our lifeline.

This problem exists in the cities and in the outlying communities. For example, a job we had in a rural community of 20,000 people in northern California replaced a septic tank system. As I prospected the job before preparing a bid, I was dumbfounded. When walking through easement lines in families' backyards to determine the location of the new system, I was walking on saturated ground. Saturated not with water, but with wastewater -- raw sewage that had overflowed from failed leaching systems. Do people deserve to be trapped like that, deprived of the use of

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their homes? What is the damage to our family structure when children home from school or on a weekend cannot play in their backyards? What do you suppose is the impact on quality of life? It is immeasurable.

The problem is not only rural, but urban as well. On a project for a major city in southern California we recently replaced a sewer pipeline that had failed earlier than expected due to unstable ground conditions. But for whatever reason, when we uncovered the existing pipe we found gaping holes where raw sewage had been escaping into the surrounding ground for an unknown period of time. The devastating part of the story is that this sewer system was less than 100 yards from a fresh waterway. Therefore, the problem was compounded almost beyond reason by tidal action. Twice in a 24-hour period, the water level rose over the top of the sewer line, so wherever the pipeline had failed, it was accepting fresh water to be carried to a treatment plant. Conversely, when the tide was out, so went the sewage. What we had uncovered was a daily exchange of raw sewage and fresh water.

Failed Water Systems

There are more than 76,000 community and ancillary water systems

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in the U.S. An astounding number of these systems, because they were installed so long ago, are in serious disrepair. I know this because my son just finished a 10,000-foot replacement water line for a small community in southern California. He was continually plagued by work suspensions because the adjacent line, which his work replaced, was leaking and had to be repaired. This kind of situation -- waiting until existing infrastructure is completely worthless before replacing it -- has enormous costs, but that is not my point. The point is that there were countless holes in the water system that resulted in a tremendous loss of water to the community. Furthermore, leaking domestic water often combines with sewage from leaking sewers. The water pollution proliferates, and the unsuspecting people downstream suffer the consequences.

Combined Overflows

A similar problem occurs with combined sewer overflows (CSOs). There are 1,100 combined sewer systems in the U.S., and more than 300 of them are known to have overflow problems. The root of the problem is economic. Communities that designed and built combined sewer/storm drain systems saved money in the short term, but ignored or failed to

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anticipate decades of growth, which have rendered these systems obsolete. What was an accepted industry standard earlier in the century is now unacceptable and environmentally devastating.

On a project in the Northwest, where our firm replaced an old, large-diameter brick sewer, there were numerous days when work was suspended due to heavy rainfall. This combined system discharged raw sewage and rainwater directly into a great river. On more than one occasion, I stood with my superintendent on the river's edge, not believing what I was seeing: raw sewage flowing into the river because the treatment plant could not process the influx added by the storm.

On the one hand, sewage is escaping and contaminating our streams, rivers, lakes, and land. At the same time, contaminated stormwater runoff and clean rainfall is carried to treatment plants. We try to construct bigger and better treatment plant facilities, while ignoring the root of the problem which is underground. An incisive, rigorous attack at the source -- the failing infrastructure -- will swiftly and effectively stop the contamination of the water supply. All combined sewer systems need to be augmented so they are either a storm system or a sewer system, not both.

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Summary: Disappearing Fresh Water Supply

Given the deteriorating state of our water and sewer infrastructure, we must act immediately. I don't need to tell you the importance of clean water to everyday life. However, I hope to make it clear that decaying sewer systems, failed water systems, and combined overflows are jeopardizing that basic, life sustaining need. Another related facet of the problem is the need for new clean water facilities in communities that have never had any facilities at all, due to financial inability, rapid population growth, or misdirected priorities, among other reasons.

We are destroying our water supply, not by using it for drinking, bathing, cooking, and manufacturing, but by not providing and maintaining adequate facilities to acquire it, deliver it, and clean it. A concerted effort to correct any one of these problems automatically addresses the other system failures. They are closely interrelated. Along with the immediate benefit of ensuring a healthy water supply and waste disposal system for everyone, correcting these problems will provide immediate and lasting economic benefits.

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Subcommittee Questions

In the invitation to participate in this hearing, the Subcommittee asked four questions, addressed below:

1. **What are the estimated short- and long-term needs for clean water related construction projects in this country?**

In December of 1991, the Clean Water Council published a study entitled America's Environmental Infrastructure: A Water and Wastewater Investment Study. The study projected needs (estimated in 1988 dollars) over the period 1993-2000 using historical data.

At the upper bound, the states could have to finance as much as \$167 billion in capital spending for water supply and wastewater facilities, while also trying to finance \$196 billion in operation and maintenance spending. If current spending trends continue, public funding of the capital needs might provide up to \$88 billion, implying an upper-bound shortfall of a \$79 billion between projected needs and spending for national water infrastructure for the eight-year period.

This estimate may be too high for two reasons: (1) Replacement estimates are based on a 20-year life for capital equipment, yet some facilities, especially sewers, last 40-50 years; and (2) We assumed that full compliance was achieved by the year 2000, consistent with EPA estimates at the time, but the process could be stretched out over a longer time.

On the other hand, the \$79 billion shortfall, based in large measure on the 1988 EPA needs survey, may be quite conservative: (1) The data do not account for the cost of stormwater regulations; (2) The estimate does not take into account much of the potential cost to correct the combined sewer overflow problem (only \$16 billion was identified by the EPA in its 1988 needs survey); and (3) The data do not include the costs of nutrient removal in many coastal, publicly owned treatment works, which are not explicitly in violation of the Clean Water Act but nonetheless are sources of low dissolved oxygen in receiving waters. Taking all the factors into consideration, we believe it would be safe to

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say that the projected capital shortfall will be at least \$50 billion between 1993 and the turn of the century.

We strongly recommend that the Subcommittee also consider recent needs projections conducted by the U.S. EPA, the Association of State and Interstate Water Pollution Control Administrators, and the Association of Metropolitan Sewerage Agencies.

2. **How would more federal funding for clean water infrastructure affect jobs, the economy, and economic productivity at the local level? How does lack of adequate funding affect the economy?**

More federal funding for vital, ready-to-go clean water infrastructure projects will create employment, increase private sector profitability, increase labor productivity, increase private investment in plant and equipment, and increase the tax base. These benefits accrue at the national and local level. Direct construction employment at a particular jobsite primarily benefits the local economy.

A. Creating Employment

There are hundreds of thousands of trained men and women in the utility construction industry currently out of work. They are already trained, and their skills are not obsolete. They want to be productive but can't be because society is unwilling to increase its investment in expensive but necessary projects.

Furthermore, the support groups are waiting to turn on their assembly lines: pipe manufacturers (clay, concrete, ductile iron, plastic, steel); material suppliers of sand, gravel, cement, asphalt; manufacturers of construction machinery and related equipment (earth moving equipment, and ancillary industries that supply parts, labor, engines, tires, hydraulics, etc.). In addition, we have the necessary engineering support and agencies at the ready. Universal in its impact, the list continues, multiplying and perpetuating itself with each and every contract.

According to a 1992 job creation report prepared for NUCA, as

many as 57,400 direct, indirect, and induced jobs are created for every \$1 billion invested in water and wastewater infrastructure. A second job creation estimate put forth by the U.S. EPA suggests that 58,500 jobs are created for every \$1 billion invested.

B. Profits, Productivity, And Capital Stock

I am not an economist, but every day I see the link between water facility investment and economic growth. It is an obvious fact that pipes in the ground are a precondition for housing, consumer services, and industrial and agricultural production. In a more immediate sense, each of my construction jobs employs workers, puts food on their tables and clothes on their backs, generates capital investments in construction equipment, and increases demand for manufactured and raw materials. Further, the federal government's long-term return on investment can be measured by increased private profitability, enhanced labor productivity, and increased investment in plant and equipment. In other words, the economy

as a whole is strengthened, and the corresponding expansion of the tax base enables the federal government to recoup its investment. There aren't many federally aided endeavors that can boast such positive benefits. Appendix A, reprinted from "America's Environmental Infrastructure," provides an overview of the relationship between clean water investment and economic health.

A lack of adequate clean water infrastructure funding affects local economies in a variety of ways, depending on the location and nature of the unmet needs. Appendix B provides several examples.

3. What is the best method to provide this funding: an expanded construction grants program or continued reliance on the State Revolving Loan Funds?

NUCA does not have a direct role in the administration of federal clean water funds. Members of our industry bid on funded projects

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when bids are solicited by project owners. Nevertheless, the utility construction industry and the American taxpayer have a direct stake in the efficient and effective use of limited federal resources.

Funding should be provided in a manner that is equitable to all states and localities. Funding should be provided through a mechanism capable of meeting the documented national needs. The funding mechanism should be tailored to meet local needs. The funding mechanism should be fashioned to encourage compliance with the Clean Water Act. It should also encourage leveraging in order to stretch limited resources.

NUCA supported creation of the State Revolving Loan Fund (SRF) Program in 1987. At present, we believe that the existing SRF funding structure should be improved, not eliminated. Our Board of Directors will revisit this issue at our winter meeting next week. We also continue to support Rural Development Administration (formerly FmHA) grant and loan programs for water and waste disposal, which help to meet the needs of rural communities.

4. Please comment on revenue generating programs to increase funding for water infrastructure.

NUCA supports the creation of a revenue generating program targeted directly and exclusively to water infrastructure projects. We believe that the revenue raising program should incorporate a user fee principle. We are not prepared to endorse specific proposals at this time.

I would like to close by commending the Subcommittee for its serious consideration of clean water funding issues. I continue to be amazed that so much of the enormous federal budget is considered more important, more sacrosanct to the present and future quality of life in this country than clean water. Our organization would be happy to provide the members of the Subcommittee with real-world stories that illustrate the relationship between clean water capital investment and economic health in any congressional district.

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Appendix A

CHAPTER III

EFFECTS OF INVESTMENTS IN WATER AND WASTEWATER INFRASTRUCTURE ON ECONOMIC GROWTH

Investment in drinking water and wastewater treatment is clearly important for individual health; the Clean Water Act and subsequent amendments increasing quality standards are manifestations of the public understanding of this importance. Environmental infrastructure also plays a role in economic well-being. This role is less well documented and often overlooked.

There is empirical evidence, however, that the economic impact of infrastructure investment is significant. These findings give added urgency to programs to address anticipated capital shortfalls.

Traditionally, the assessment of the economic effects of infrastructure investment have focused on their counter-cyclic effects — the potential for public works spending to stimulate the overall demand for goods and services. But in recent years, a growing number of economists have investigated the impact of public investment on the economy from a “supply-side” perspective. They find that public works facilities are just as necessary for efficient private sector production as are private factories or construction equipment. They find evidence that an improved level of public sector infrastructure brings forth higher private profits, acts to spur additional private investment in plant and equipment, and works to improve growth in labor productivity.⁷

For example, the production of soft drinks by Pepsico relies on a clean and steady water source made available by a water and sewer system of sufficient scope and condition. When a public utility supplies Pepsico with water and sewer services at prices less than Pepsico could self-supply them (due to economies of scale associated with the larger public system) the economy benefits through higher private profits, enhanced public tax revenues, lower prices to the consumer, or some combination of the above.

This chapter demonstrates that public investments in water and wastewater strengthen the private economy. Compared to a baseline that extends current trends, we simulate a scenario of enhanced public investment in water and wastewater infrastructure that shows that increased public spending for these vital services results in:

- Increases in private profitability in the short run, stabilizing at more than half a percentage point higher by 2015;
- Increases in private investment in new facilities and equipment after about six years, continuing in the long run; and

- Dramatic increases in private productivity (the rate of economic output per unit of labor) — almost immediately — and sustained increases through 2015.

The net result of these trends is a self-financing system. Public spending for water and wastewater facilities improves private profitability and increases wages, which in turn yield higher tax revenues to government. With sufficient initial investment, government spending is "paid back" in tax revenues in less than a decade. Moreover, because public investments strengthen the private economy, American industry can benefit from increased competitiveness in international markets.

Considerable empirical evidence has been brought forth to substantiate claims that inferior public investment across all modes of infrastructure can act as a drag on the private economy. Research by Dr. David Aschauer, formerly of the Federal Reserve Bank of Chicago, showed that:⁸

- An increase in public investment spending large enough to raise the level of civilian public capital stock by 1 percent is capable of raising the profit rate on nonfinancial corporate capital by 10 basis points (1/10th of 1 percentage points);
- The same increase in the level of public infrastructure will in time, stimulate private investment in plant and equipment; and
- Such an increase in public works spending raises the growth rate of labor productivity directly — by allowing the available private capital stock to be utilized more efficiently — and indirectly — by promoting private investment spending and, thereby, additions to the amount of private capital available per worker. The effect on productivity is found to be substantial; indeed, the empirical estimates imply that insufficient public investment over the past two decades explains as much as 60 percent of the fall-off in productivity growth experienced during that period.

This chapter builds upon these and other recent results in the economics literature.⁹ The emphasis is on the long-term effects of the expenditure on these vital economic statistics; the analysis makes no attempt to capture the more traditional short-term stimulus to aggregate demand, employment, and output.

SIMULATED LONG-TERM EFFECTS

The economic simulation presented below shows the likely paths for profitability, private investment, and productivity growth under three different policies regarding infrastructure spending. In short, the policies are:

1. Baseline: the growth rate of the stock of public infrastructure capital, in general, and of water and wastewater capital, in particular, are kept at the average rates during the period from 1980 to 1988 — in the case of general infrastructure, 0.75 percent per year, and in

the case of water and wastewater, 1.7 percent per year. Also, the baseline path assumes

- growth in the labor force of approximately 1 percent per year, and
 - growth in the basic level of productive efficiency of 1 percent per year, arising from current investment levels, from improved quality within the labor force, and from research and development expenditure.
2. Infrastructure investment: the growth rate of the general infrastructure is increased gradually over the period 1990 to 1999 by 1/10th of a percent per year and maintained at the higher rate thereafter. Thus, after 1999 the stock of infrastructure capital grows at a rate of 1.75 percent each year.
 3. Water and wastewater investment: the growth rate of the stock of water and waste water facilities is similarly increased from 1.7 percent per year over the period from 1990 to 1999 to arrive at a rate of 2.7 percent per year by the year 2000.¹⁰ From the year 2000 to 2015 the growth in water and wastewater facilities is kept at 2.7 percent per year.

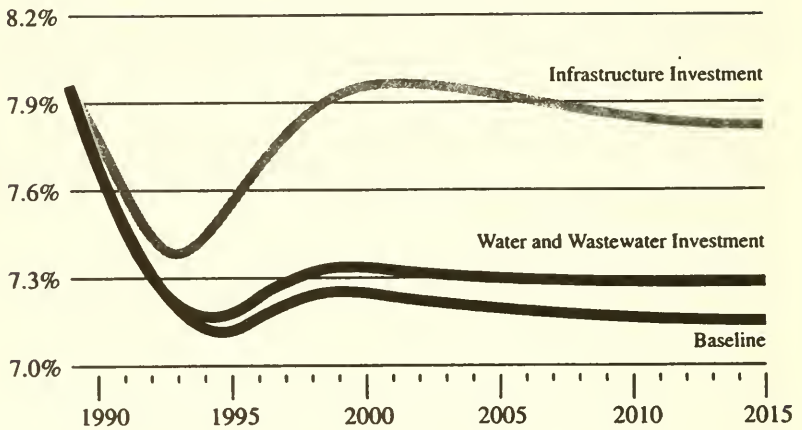
EFFECT ON PROFITABILITY

While the two infrastructure programs represent the same percentage increase in spending, they differ in their magnitude and in their breadth. The water and wastewater program is more targeted. It also represents a smaller financial commitment.

Figure 3 shows the likely effects of the various policies on the rate of return to private capital equipment and structures. Under the baseline scenario, the rate of return to capital falls from a level just above 7.9 percent in 1990 to around 7.1 percent by 1995 before rebounding, to a minor extent, and ending up at 7.24 percent in 2015. Part of the reduction in the rate of return throughout the period is due to an assumed capacity utilization rate after 1990 of 82 percent, somewhat below the 83.9 percent attained in 1989.

The implied lower level of economic activity directly reduces the profit rate. But the fall in the rate of return to capital is also partly due to the impact of a falling ratio of infrastructure capital — both general and water and wastewater facilities — to private capital. Under the baseline scenario, the average rate of growth of the private capital stock is 2.82 percent per year, substantially higher than the rate of growth of infrastructure (0.75 percent per year) and of water and wastewater facilities (1.7 percent per year). It is the increased pressure, over time, of insufficient public investment on the efficiency of the private capital stock which largely works to depress the rate of return to capital.

FIGURE 3 - RETURN TO PRIVATE CAPITAL



- Baseline** — public infrastructure capital continues to grow at 1980 - 1988 average rate — 0.75 percent per year (general) and 1.7 percent per year (water and wastewater); and 1 percent per year growth in both the labor force and productive efficiency.
- Water and Wastewater Investment** — growth rate of investment in water and wastewater facilities increases from 1.7 percent per year from 1990 through 1999 to be at 2.7 percent per year and is constant at 2.7 from 2000 to 2015.
- Infrastructure Investment** — growth rate of investment in general infrastructure increases 1/10 of one percent per year from 1990 through 1999 and is constant at 1.75 percent per year after 1999.

Under either of the infrastructure investment scenarios, therefore, the outlook for the future profit rate improves. An increase in the stock of general infrastructure capital pushes up the rate of return to capital so that by the year 2002 it exceeds its 1990 value of 7.9 percent and ends at 7.8 percent in the year 2015. An increase in the stock of water and wastewater facilities has a more modest but nevertheless important impact on private sector profits; by the year 2015, the private profit rate is 7.33 percent. The difference in the size of the effect is due in part to the lower level of spending implied by the water and wastewater options.

EFFECT ON GROWTH IN THE PRIVATE CAPITAL STOCK

The impact of the various scenarios on the growth rate of the stock of private equipment and structures is depicted in Figure 4. Here, under the baseline scenario, the growth rate of the private capital stock falls from 3.9 percent per year in 1990 to 2.6 percent by 1997. The recent decline in private capital accumulation is due to the drop in the rate of return to private capital depicted in Figure 3 above, and thus indirectly arises because of insufficient public investment spending to upgrade and expand the nation's infrastructure.

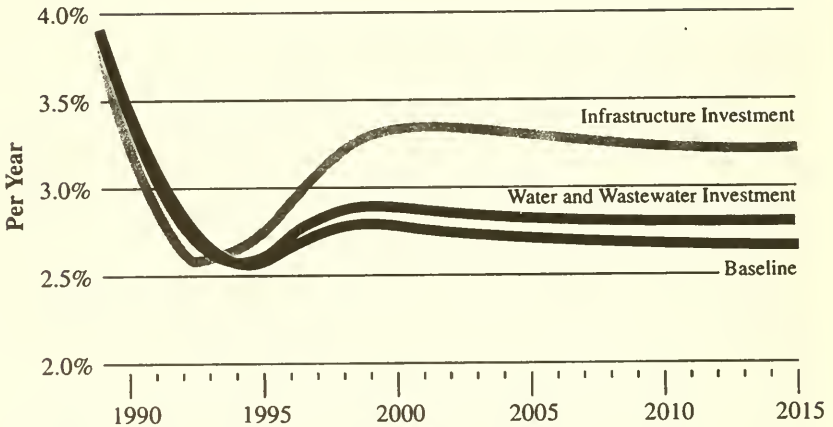
As can be seen, private investment is depressed to an even larger degree until the year 1997 upon additional investment in general infrastructure. This results from a scarcity of aggregate resources, an implied rise in capital goods prices and real interest rates, and a "crowding out" of private investment.

After 1997, however, the beneficial impact of an improved public infrastructure capital stock on private profits boosts private investment spending and the growth rate of the private capital stock reaches 3.03 percent by 2015. The path for private investment under the water and wastewater investment policy is qualitatively the same as under the general infrastructure investment policy; by 2015 the growth rate of the private capital stock equals 2.86 percent per year.

EFFECT ON GROWTH IN LABOR PRODUCTIVITY

Figure 5 traces the effects of the three scenarios for public sector investment on the growth rate of labor productivity in the private sector. The effect of higher public investment on productivity is considerable; under the general infrastructure policy productivity growth averages 1.84 percent per year while under the water and wastewater policy productivity growth averages 1.74 percent per year—gains of 0.08 and 0.18 of a percent per year over the average rate of growth of productivity under the baseline scenario, which is 1.66 percent per year. While clearly not capable of reaching the level of productivity growth attained during the 1950s and 1960s—some 2.8 percent per year—higher public investment of the magnitude assumed in the "infrastructure" and "water and wastewater" scenarios would nevertheless have significant positive impacts on productivity growth in the private sector.

FIGURE 4 - GROWTH IN PRIVATE CAPITAL

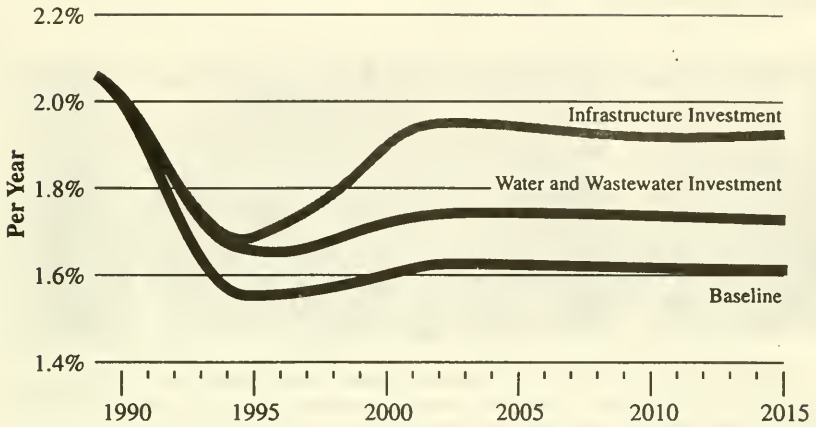


Baseline — public infrastructure capital continues to grow at 1980 - 1988 average rate — 0.75 percent per year (general) and 1.7 percent per year (water and wastewater); and 1 percent per year growth in both the labor force and productive efficiency.

Water and Wastewater Investment — growth rate of investment in water and wastewater facilities increases from 1.7 percent per year from 1990 through 1999 to be at 2.7 percent per year and is constant at 2.7 from 2000 to 2015.

Infrastructure Investment — growth rate of investment in general infrastructure increases 1/10 of one percent per year from 1990 through 1999 and is constant at 1.75 percent per year after 1999.

FIGURE 5 - GROWTH IN PRODUCTIVITY



- Baseline** — public infrastructure capital continues to grow at 1980 - 1988 average rate — 0.75 percent per year (general) and 1.7 percent per year (water and wastewater); and 1 percent per year growth in both the labor force and productive efficiency.
- Water and Wastewater Investment** — growth rate of investment in water and wastewater facilities increases from 1.7 percent per year from 1990 through 1999 to be at 2.7 percent per year and is constant at 2.7 from 2000 to 2015.
- Infrastructure Investment** — growth rate of investment in general infrastructure increases 1/10 of one percent per year from 1990 through 1999 and is constant at 1.75 percent per year after 1999.

SUMMARY OF SIMULATION RESULTS

What do these gains in productivity growth and in private capital accumulation mean in dollars? Table 4 shows the cumulative effect of productivity growth and private capital accumulation under the three alternative scenarios.

Table 4: Cumulative Effect of Infrastructure Investment

	Productivity	Private Capital Stock
1989 actual	\$30.7	\$4,029 billion
2015 forecast		
baseline	\$47.738	\$5,475 billion
water/wastewater	\$43.816	\$5,560 billion
infrastructure	\$50.185	\$5,932 billion

Note: All activity is measured in 1989 dollars. All figures are in constant 1989 dollars. All figures are in constant 1989 dollars. All figures are in constant 1989 dollars. All figures are in constant 1989 dollars.

Clearly, significant increases in both output per laborer and the capital stock can be expected from higher public investment in infrastructure or in water and wastewater facilities. Due to the nature of compounding, what may first appear as relatively small effects on growth rates—of productivity and capital, respectively — are ultimately very large. By the year 2015, higher public investment yields output gains of \$2,247 per worker for general infrastructure spending and \$1,028 per worker for water and wastewater expenditure. At the same time, the private capital stock would have risen by an additional \$458 billion or \$85 billion under the respective investment scenarios.

TAX REVENUE IMPACTS

The previous section, which linked public investment in water and wastewater infrastructure to heightened national productivity, suggests that substantial tax revenues may be generated by an increased level of spending on such public works facilities. As was seen above, an improved public capital stock makes for a stronger economy, higher incomes to laborers and owners of capital, and an expansion in the income tax base.

We can obtain a rough estimate of the magnitude of the revenue impact of water and wastewater infrastructure spending by making use of the economic model employed to carry out

the simulations in the previous section. The procedure involves estimating the likely impact of a certain dollar-sized investment in water and wastewater facilities on present and future output and, thereby, on tax revenues.

The stream of higher tax revenues can then be summed, after appropriate discounting, to compare to the cost of the original investment in infrastructure. If the ratio of discounted benefits to the project cost exceeds unity, the project is self-financing from a long-run perspective.

To this end, we consider a one-time investment in water and wastewater facilities of \$2.5 billion. This amount is chosen as it represents 1 percent of the net stock of water and wastewater capital as of the end of 1989. It is further assumed that the water and wastewater capital stock is subsequently maintained at the higher attained level, which, given a depreciation rate of 2.5 percent per year, requires an annual maintenance investment of \$.062 billion.

The simulation model is then used to generate the output effects of the higher public capital stock. The output stream is multiplied by an assumed average tax rate of 15 percent and depreciation charges are subtracted to obtain a net (tax) benefit stream. Finally, the net benefit stream is discounted at a 10 percent discount rate to place the cumulative levels of net benefits in present value terms.

Table 5 shows the present value of the net tax benefits for five year intervals beginning in 1995 and ending in 2015. As can be seen, even under a relatively conservative set of assumptions regarding the appropriate tax rate (15 percent) and discount rate (10 percent), a marginal investment in water and wastewater facilities is self-financing in the space of less than a decade.

Table 5: Tax Revenue Impacts of Water and Wastewater Infrastructure Investment

	Tax Benefits	As Ratio to Cost
1995	\$1.52 billion	.61
2000	\$3.13 billion	1.26
2005*	\$4.28 billion	1.73
2010	\$5.10 billion	2.06
2015	\$5.69 billion	2.29

Note: Dollar magnitudes in constant 1989 dollars. The investment is assumed to take place during 1990 at an initial capital cost of \$2.48 billion.

It is important to note, however, that these gains to tax revenue are due to the general response of the economy to additional, vitally needed public capital facilities and may not be seen by the typical observer as due to the public investment per se.

Appendix B



UTILITY and TRANSPORTATION CONTRACTORS ASSOCIATION OF NEW JERSEY

P.O. BOX 815, 150 AIRPORT ROAD, LAKEWOOD, NJ 08701 908-367-1500 FAX: 908-905-4951

ROBERT A. BRIANT, SR.
Executive Director

January 20, 1993

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JOSEPH D. DRANKANZIO
GEORGE HARMS

Mr. William Harley
NUCA
4301 North Fairfax Drive
Suite 360
Arlington, VA 22203

Dear Bill:

Several years ago, the Somerset Raritan Valley Sewerage Authority expanded its wastewater treatment plant while also adding new technology to the system. Prior to the work being completed, its service area was placed under a moratorium for approximately 2 years.

Enclosed is a list of private work which was in various stages of development when the moratorium on construction was placed due to the need for work at the Somerset Raritan Valley Sewerage Authority wastewater plant. The approximately total value of this private work was \$300 million. The value of the public work to expand and improve the Somerset Raritan Valley Sewerage Authority plant was about \$35 million.

As you can see, the private economic value was nearly ten times the public input to this clean water project. Additional private work will also follow in the future. It is imperative that federal funding for this work continue in the future so that private investment in the economy can follow.

Sincerely,

Robert A. Briant
ROBERT A. BRIANT, SR.
Executive Director

RAB:gg

Enclosure

AFFILIATIONS —
American Road & Transportation Builders Association
National Utility Contractors Association

PROJECTS IN SOMERSET COUNTY POTENTIALLY STALLED
BY NEW JERSEY DEPARTMENT OF ENVIRONMENTAL
PROTECTION SEWER MORATORIUM IMPOSED ON
SOMERSET RARITAN VALLEY SEWER AUTHORITY
(REVISION NO. 1)

(NOTE: MORATORIUM PERIOD - 7/1/88 THROUGH 4/6/90)

<u>Review Date</u>	<u>Name</u>	<u>Project Description</u>
<u>Branchburg</u>		
10/88	Kingswood Village	49 Residential Units
2/89	Branchburg Municipal Building	16,450 Sq. Ft. Office
3/89	Branchburg Corporate Center	431,233 Sq. Ft. Office
3/89	Branchburg/202 Trade Center	623,680 Sq. Ft. Office/Warehouse
3/89	Cariboo Associates	118,919 Sq. Ft. Office/Warehouse
5/89	Branch Estates	24,000 Sq. Ft. Office
6/89	Medway Realty Associates	158,340 Sq. Ft. Office/Warehouse
6/89	Ralph L. Brass & Company	57,985 Sq. Ft. Office/Warehouse
9/89	Murray Corporate Center	87,778 Sq. Ft. Office
9/89	Timbers At Branchburg	34 Residential Units
10/89	Shannon Court	4 Residential Units
12/89	Shemin Nurseries	22,361 Sq. Ft. Commercial
12/89	Conolog Corporation	38,838 Sq. Ft. Industrial

Branchburg Subtotals

87		Residential Units
22,361	Sq. Ft.	Commercial
559,461	Sq. Ft.	Office
958,924	Sq. Ft.	Office/Warehouse

<u>Review Date</u>	<u>Name</u>	<u>Project Description</u>
<u>Bridgewater</u>		

7/88	Black Tree Associates	6 Residential Units
8/88	Golden Meadows	16 Residential Units
10/88	Estates At Winslow Rise	20 Residential Units
11/88	Brown Road	4 Residential Units
11/88	Gateway Oldsmobile	18,200 Sq. Ft. Commercial
12/88	Village Tavern	2,668 Sq. Ft. Commercial
1/89	Milltown Road	75 Residential Units

<u>Review Date</u>	<u>Name</u>	<u>Project Description</u>
<u>Bridgewater (Cont'd.)</u>		
1/89	Somerset Corporate Center	1,500,000 Sq. Ft. Office
2/89	Tall Oaks Estates	11 Residential Units
2/89	Meadowbrook Village	14 Residential Units
3/89	Deitrich Subdivision	6 Residential Units
4/89	Revere Avenue	6 Residential Units
6/89	BPO Elks Lodge & Treatment Center	20,000 Sq. Ft. Institutional
6/89	Madison Avenue	1 Residential Unit
6/89	Foothill Road	16 Residential Units
12/89	Glenbrooke	430 Residential Units
1/90	Sheraton Hotel At Bridgewater Commons	200 Room Hotel
1/90	Hobbs Development Corporation	10 Residential Units
1/90	Mini Corporation	22,500 Sq. Ft. Office
2/90	Wishnow	14 Residential Units
3/90	Bridgewater Commons Office Center	500,000 Sq. Ft. Office

Bridgewater Subtotals

629		Residential Units
20,868	Sq. Ft.	Commercial
2,022,500	Sq. Ft.	Office
20,000	Sq. Ft.	Institutional
200 Room		Hotel

<u>Review Date</u>	<u>Name</u>	<u>Project Description</u>
<u>Hillsborough</u>		
3/89	Dogwood Meadows	9 Residential Units
3/89	Winding Meadows	9 Residential Units
3/89	Regency Industrial Campus	770,000 Sq. Ft. Industrial
3/89	Somerset County Maintenance Building	6,900 Sq. Ft. Commercial
6/89	West Ridge	46 Residential Units
6/89	Towne Center	71,000 Sq. Ft. Commercial
6/89	Rohill Village	14 Residential Units
11/89	New Center Village Square	53,500 Sq. Ft. Commercial
12/89	Crestmont Hills	336 Residential Units
2/90	Hillsborough Office Park	82,500 Sq. Ft. Office

Hillsborough Subtotals

414		Residential Units
131,400	Sq. Ft.	Commercial
82,500	Sq. Ft.	Office
770,000	Sq. Ft.	Industrial

Review Date NameProject DescriptionRaritan

2/89	"The Wiz"	8,750 Sq. Ft. Commercial
6/89	Raritan Office Park	9,600 Sq. Ft. Office
10/89	Columbus Avenue	2 Residential Units
12/89	Ortho Pharmaceutical	78,700 Sq. Ft. Industrial
12/89	Ortho Pharmaceutical	20,000 Sq. Ft. Day Care

Raritan Subtotals

2		Residential Units
8,750	Sq. Ft.	Commercial
9,600	Sq. Ft.	Office
78,700	Sq. Ft.	Industrial
20,000	Sq. Ft.	Day Care

Review Date NameProject DescriptionSomerville

7/89	Franklin Street Associates, Inc.	38,750 Sq. Ft. Commercial
7/89	E.R. Squibb & Sons, Inc.	(Change of Use - No additional Sq. Ft.)
11/89	South Bridge Street	2 Residential Units
12/89	Post Stores, Inc.	2,200 Sq. Ft. Office

Somerville Subtotals

2		Residential Units
38,750	Sq. Ft.	Commercial
2,200	Sq. Ft.	Office

Review Date NameProject DescriptionWarren

Estates At Winslow Rise	8 Residential Units
-------------------------	---------------------

Warren Subtotals

8

Residential Units

Greenbrook

None

GRAND TOTAL

1,142

222,129

Sq. Ft.

2,676,261

Sq. Ft.

958,924

Sq. Ft.

20,000

Sq. Ft.

848,700

Sq. Ft.

20,000

Sq. Ft.

200 Room

Residential Units

Commercial

Office

Office/Warehouse

Institutional

Industrial

Day Care

Hotel

* Total Approximate Value Of Work - \$300 million

STATE UTILITY CONTRACTORS, INC.

P.O. BOX 5019 • MONROE, N. C. 28111-5019 • (704) 289-6400
FAX (704) 282-0590

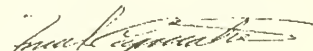
January 27, 1993

NUCA
Arlington, Virginia
FAX (703) 358-9307

Examples of how Capital Investment in Water and Sewer Infrastructure Impact the Development of Our Area

1. Our home county, Union County, N. C., is adjacent to rapidly expanding Charlotte, N. C. There is a great demand for home building throughout western Union County, but there is currently a moratorium on building more homes because of the lack of sewer treatment capacity (and collection lines). This is directly related to funding. If funding can be obtained, existing wastewater treatment plants can be expanded quickly, and a very large amount of home building would follow very quickly.
2. The northern and eastern portions of Union County are predominantly agricultural. We are the largest poultry producing and processing county in North Carolina, and one of the largest in the nation. We have major processing plants of Tyson Foods and Cuddy Foods in the county, and employment at these plants is several thousand. Each plant has large water and wastewater treatment needs. Each of these plants has expansion plans on hold until additional water and wastewater treatment capacities can be provided. Funding for water and wastewater facilities is the major problem. Additional funding could accommodate their expansion plans very quickly.

STATE UTILITY CONTRACTORS, INC.



Frank W. Carpenter

FWC:cw



UTILITY CONTRACTORS ASSOCIATION OF WASHINGTON

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Richard J. Ducharme

February 11, 1993

TO: Bill Hillman

FROM: Jayne Schraw

In 1963 the Municipality of Metropolitan Seattle began to clean up Lake Washington, a 25 mile long lake, which lies to the east of the Seattle city limits. The lake was polluted with treated ethylene entering the lake from several sewage treatment plants bordering the lake. The pollution created human health problems and a moratorium was placed on swimming and recreational use. Spray from a water skier was visibly brown.

The funding from governmental sources allowed the major clean up producing a lake that is enjoyed year round by millions of northwest residents and vacationers.

CONSTRUCTORS OF WATER, SEWER AND UNDERGROUND UTILITY SYSTEMS

Appendix C

Clean Water Council

Committed to America's Clean Water Future

4301 N. Fairfax Drive, Suite 360, Arlington, Virginia 22203 (703) 358-9300

February 5, 1993

The President
The White House
1600 Pennsylvania Avenue, N.W.
Washington, D.C. 20500

Dear Mr. President:

The Clean Water Council is a coalition of trade and public associations, labor organizations, and professional societies committed to increased federal investment in clean water infrastructure. The Council represents the people who finance, design, build, and operate our nation's environmental facilities. We look forward to working with your Administration to address this neglected national priority.

The fact that our drinking water and water pollution treatment infrastructure requires substantial capital investment is undisputed. The most recent U.S. EPA assessment concludes that \$110 billion will be needed to address wastewater collection and treatment alone. Other studies conducted by Clean Water Council members draw similar, less conservative conclusions. The environmental, public health, and economic ramifications of the problem are serious and national in scope.

We strongly encourage your Administration to propose two solutions that will spur immediate employment, strengthen long-term economic growth and address the massive clean water deficit:

- 1993 Economic Stimulus Package

Supplemental appropriations targeted to water quality construction projects will put a lot of people to work quickly. The U.S. EPA estimates that 58,500 jobs are generated by every \$1 billion invested in wastewater collection and treatment. The total value of wastewater projects ready for construction during the next year is \$11.9 billion (\$7.2 billion for sanitary sewer projects and \$4.7 billion for wastewater treatment).

For these reasons, the 1993 economic stimulus package should target at least \$3 billion in supplemental federal appropriations to the fiscal year 1993 State Revolving Loan Fund (SRF) Program administered by the U.S. EPA (approximately \$2 billion has already been appropriated to the SRF Program in this fiscal year).

Project construction could be substantially accelerated if specific SRF requirements are temporarily waived. For example, many states are hard-pressed to meet the 20% state match requirement. Also, restrictions on funding collectors and combined sewer overflows (section 201(g)(1) of the Clean Water Act) hinder short-term job creation because a large percentage of the ready-to-go projects are sewer projects.

If SRF eligibility is expanded to include water supply projects, an additional \$2 billion should be earmarked for the SRF Program. Furthermore, we support supplemental appropriations dedicated to existing FmHA water and waste disposal grant and loan programs, which will put people to work in small communities that cannot afford SRF loans.

It is important to use these existing program mechanisms to accelerate water quality infrastructure investment so that people can start working immediately.

- Fiscal Year 1994 Budget

Wastewater collection and treatment funding needs to be reestablished at the \$5-billion level in fiscal year 1994. If the federal government decides to address safe drinking water infrastructure needs, additional funding will be required. Furthermore, the federal tax code should be streamlined as it pertains to bond issuance and arbitrage to encourage leverage of the state revolving funds. The particular needs of small, rural communities must also be addressed.

Adequate funding for water quality facilities must be reestablished as a domestic priority because the projects protect public health, protect the environment, generate employment, and spur long-term economic health. Investment in this area increases the rate of return to private capital, increases the growth rate of labor productivity, increases private investment in plant and equipment, and increases the tax base.

We appreciate your recognition that clean water is a necessary public good and a vital element of public trust in government. We would welcome the opportunity to provide assistance and support to your Administration as you work to ensure that America's future clean water needs are met.

Sincerely,

American Concrete Pipe Association
 American Consulting Engineers Council
 American Road and Transportation Builders Association
 American Subcontractors Association
 Associated Equipment Distributors
 Association of Metropolitan Sewerage Agencies
 Assn. of State and Interstate Water Pollution Control Administrators
 Building and Construction Trades Department, AFL-CIO
 Construction Industry Manufacturers Association
 Council of Infrastructure Financing Authorities
 Ductile Iron Pipe Research Association
 National Utility Contractors Association
 Parsons Brinckerhoff Quade & Douglas, Inc.
 Uni-Bell PVC Pipe Association
 Water and Wastewater Equipment Manufacturers Association
 Water and Sewer Distributors of America

WRITTEN STATEMENT
OF THE
AMERICAN FOREST AND PAPER ASSOCIATION
TO THE
SUBCOMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES
COMMITTEE ON MERCHANT MARINE AND FISHERIES
U.S. HOUSE OF REPRESENTATIVES

February 18, 1993

WRITTEN STATEMENT
OF THE
AMERICAN FOREST AND PAPER ASSOCIATION
TO THE
SUBCOMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES
COMMITTEE ON MERCHANT MARINE AND FISHERIES
U.S. HOUSE OF REPRESENTATIVES

February 18, 1993

The member companies of American Forest and Paper Association (AFPA) appreciate the opportunity to express their concerns with the proposal by Chairman Gerry Studds (D-MA) to create a National Clean Water Investment Corporation, to be funded by new federal taxes on permitted discharges and on industrial, commercial, agricultural, and consumer products. As companies and businesses that would be significantly impacted by such a proposal, AFPA members have a substantial interest in the subject matter of this hearing.

Background

The American Forest and Paper Association is the national trade association of the forest products, pulp and paper industry. The U.S. forest and paper industry is a vital economic force in today's marketplace. Its member firms directly employ 1.6 million workers in the growing of trees, manufacturing of forest and paper products, and recovery and recycling of paper products, accounting for 7 percent of all U.S. manufacturing. Collectively, the industry injects \$43.5 billion into local economies through wages and salaries and ranks among the top 10 employers in 40 of the 50 states. The industry is also one of the leading positive contributors to the U.S. balance of payments, effectively competing in the world marketplace with U.S. exports of \$16 billion annually. The forest and paper industry is one of only two U.S. industries recently rated "A" by Fortune magazine for international competitiveness.

The forest products industry has an extensive track record of success in environmental improvements, particularly in water quality improvements and pollution control and prevention. Currently, the industry complies with what are in actual practice the world's most rigorous water pollution control and prevention laws in the world. Since the enactment of the 1972 Federal Water Pollution Control Act, the industry has spent more than \$5 billion in capital investments to comply with federal and state water quality requirements. The industry anticipates additional capital expenditures of several billion dollars to complete implementation of the requirements of the 1987 Clean Water Act amendments. These investments have resulted in, and will continue to achieve, dramatic gains in water quality, even as industry output has increased with economic growth.

As AFPA understands the Studds proposal circulated in January, 1993, \$6 billion is proposed to be raised from three different tax mechanisms in order to establish a National Clean Water Investment Corporation to finance state and local water infrastructure needs, thus reducing appropriations for Clean Water Act programs. The mechanisms proposed are a tax on the industrial discharge of toxic pollutants (\$3 billion), a tax on industrial, commercial, and consumer products (\$2 billion), and a tax on pesticides and fertilizers (\$1 billion). Although little further detail has been provided, AFPA believes that this approach is a radical departure from current law and is extremely inequitable. AFPA's member companies would strongly oppose its enactment.

The following discussion addresses particular concerns of the forest and paper industry with the approach outlined in the Studds proposal.

State and Local Wastewater Infrastructure Needs Must Be Prioritized in Light of Funding Constraints.

Any federal efforts to fund infrastructure improvements must be preceded by a fair, objective prioritization of the needs so identified. In a world of unlimited resources, all private and public sector needs would receive the highest priority, and would be funded accordingly. As the Studds proposal makes clear, however, the public sector does not operate with unlimited resources. It must be equally well understood that the private sector does not operate with unlimited resources, either.

State and local governments, and the public, are ill-served by the consideration of alternative funding mechanisms to finance public clean water projects without first defining specific wastewater infrastructure priorities on the basis of relative risks to public health and the environment. Although such prioritization requires difficult choices among many competing demands for funding, it is essential if true infrastructure needs are ever to be addressed. While several infrastructure needs studies have been developed, it does not appear that the necessary prioritization of needs has been undertaken. This prioritization must occur before further consideration is given to financing wastewater infrastructure projects.

In conjunction with this prioritization, an extensive review of federal requirements on state and local governments under the Clean Water Act should be undertaken. State and local government officials have been virtually unanimous in their criticism of the ever-increasing burden of federal mandates and strict implementation schedules under the Act, without commensurate federal funding or other resources to implement these programs.

Rather than simply shifting the funding responsibilities for mandates to businesses, manufacturers, and agriculture, Congress should reassess its mandates

on state and local governments relative to environmental and health risks, and consider alternative schedules and greater flexibility. Such a reassessment should be undertaken during reauthorization of the Clean Water Act in this Congress.

It should be noted that the private sector, too, has operated under the strict federal mandates of the Clean Water Act; the private sector has incurred, and will continue to incur, enormous costs in order to comply with these requirements, without state or federal assistance.

The Proposal Represents a "Deep Pockets" Rather Than a "Polluter Pays" Solution.

Although described as a "polluter pays" approach to financing clean water needs, the Studds proposal circumvents most of the sources of pollution actually managed by public treatment works. Under the proposal, the primary users of municipal wastewater systems (and contributors to municipal discharge problems) would not pay at all. Rather, a substantial portion of the tax would be imposed on industrial facilities that have already paid to address their contributions to water quality impairment -- a "polluter pays twice" approach. The industrial discharge tax would fall on legitimate discharges allowed under the Clean Water Act, even if within established permit limits.

Under the Act, industrial dischargers are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit. Permit requirements, based upon best available technology (BAT), have been established for over 50 industrial categories, and over 48,000 industrial facilities have been issued NPDES permits. EPA is required by law to periodically update the effluent guidelines based on technology advances, and is in the process of a third round of modifications to the pulp and paper industry's effluent guideline.

In addition to the NPDES program, the Act establishes water quality standards for a range of pollutants. During the development of the 1987 amendments, particular concerns over toxic discharges led to the passage of Section 304(l) of the Act, the "toxic hot spots" program. Section 304(l) allows for the development of individual control strategies to address toxic pollutants of particular concern, in stream segments which require the greatest attention.

Under these strict federal and state mandates, pulp, paper, and forest products manufacturers have made substantial capital investments to dramatically improve water quality and achieve compliance with the law. The Studds proposal would impose on the industry the substantial additional burden of financing the construction of public treatment works and addressing pollution from public water systems. In this way, the proposal is extremely inequitable and represents a radical departure from the existing state-federal and private-public relationships under the Clean Water Act.

By imposing new taxes on businesses, manufacturers, and agriculture to finance public works projects, the historical link between the user of the public service and the source of funding for the service has been broken. Industrial and commercial facilities, agricultural activities, and consumer products completely unconnected to public water systems and their infrastructure needs would nonetheless be taxed. Even indirect industrial dischargers, which are subject to pretreatment standards and pay fees to publicly owned treatment works (POTWs) for additional treatment, would pay the additional taxes. Regional subsidization would also likely occur; industrial and agricultural regions with little infrastructure needs or those that have already allocated the necessary resources to local projects, would be relied on to support the infrastructure requirements of other areas of the country with the greatest remaining needs. A paper mill in South Carolina, or a tree farmer in Oregon, would be required to finance the clean-up of the Boston Harbor, hardly an equitable result.

Besides the inherent inequity of the proposal, the tax system is flawed because it lacks accountability. As proposed, infrastructure needs would be identified, presumably, by the federal government, and state and local governments would make the investments. The private sector would be called upon to fund this system without any role in the assessment of relative needs, the actual investments as they are made, or in the rate increases that are likely over time.

Rather than a "polluter pays" approach, the proposal identifies new sources of revenue -- the "deep pockets" -- unconnected to the water quality concerns at hand in order to finance public infrastructure requirements that the federal government has mandated on state and local government but cannot support. A more equitable approach would be review these requirements on state and local jurisdictions, set more realistic priorities, and then look to the sources and users of public wastewater systems to fund the necessary public infrastructure investments. Unfortunately, imposing additional costs on the private sector will only inhibit innovative private sector investment in water quality improvements.

The proposal, by increasing the tax burden on the private sector, would have severe consequences for economic growth, private sector job creation, and international competitiveness.

Given the current economic climate, new taxes and fees on businesses and consumers, in addition to those already proposed by the Clinton Administration, are unwarranted and could disrupt the ongoing economic recovery. In both the short and longer term, such taxes would have severe, negative impacts on private sector employment, consumer prices, economic growth, and U.S. competitiveness in world markets.

Rather than increase overall employment, the proposal would likely raise business costs, and inhibit economic growth and job creation in the private sector. Public sector employment gains are speculative at best, and ignore the likely offset of productive private sector job losses as a result of higher costs on businesses, agriculture and manufacturers.

Taxes on business and on industrial, commercial, and consumer products have a direct inflationary effect as well, raising the costs of an entire range of essential manufacturing inputs and everyday household products. Combined with the new energy taxes to be borne by all Americans, increased consumer prices from the Studds proposal would lead to higher interest rates and slowed economic growth. Such results are contrary to the Nation's economic interests.

Finally, the increased tax burden on businesses, agriculture, and manufacturers will raise the cost of U.S. products relative to foreign competitors. Foreign companies and products would not have this added cost. Any such cost increases, especially for manufacturers operating on tight margins, will seriously disadvantage U.S. goods in international markets. For the domestic forest and paper industry, which faces increasing global competition from Scandinavia, Germany, and the Pacific Rim, this is an especially critical concern.

The Congressional Research Service Study On Which The Studds Proposal Is Based Presents Several Unanswered Questions

In July, 1992, the Congressional Research Service (CRS), at the request of the House Merchant Marine and Fisheries Committee's Subcommittee on Fisheries and Wildlife Conservation, presented to the Subcommittee a study supporting the establishment of a National Clean Water Investment Corporation, to be funded from taxes on industrial discharges, agricultural inputs, and consumer products. It is upon this study that the Studds proposal is based. The study, however, presents several unresolved questions which deserve thorough and independent analysis before legislation is modeled after it.

First, the study is clear in defining the motivation for taxing industrial discharges, agricultural inputs, and consumer products: raising revenues. As such, the study ignores the disconnection between those being taxed and the public services being supported by the revenues raised. The study gives no consideration to the equity issues or to the traditional private/public division of responsibilities for water quality that are discussed above. Moreover, such taxes would become a permanent, ever-increasing burden on the private sector, as acknowledged in the CRS study: "So long as revenue-raising is a key objective of the fees, it will be necessary to build into the fee system a means for making adjustments over time."

Second, the study ignores the substantial fees already paid by indirect industrial dischargers that discharge into POTWs. These services are paid for by the private sector; in some areas, the indirect industrial discharger's fees support virtually the entire public wastewater system because of its reliance on that system. By ignoring this fact and imposing the tax on indirect dischargers in its analysis, the CRS study implies that these services are provided at no cost to the industrial discharger.

Likewise, the study ignores the state fees paid by industries in at least half the states to support a range of water quality programs. These fees are generally tied to the specific services and activities that those assessed are responsible for and, as such, are significantly more equitable. Ignoring the fees already paid by the regulated community leaves the impression that costs incurred by the states in operating their programs are unsupported, a misleading impression. Moreover, the study fails to recognize that, to the extent the federal government imposes taxes on manufacturers, businesses and agriculture, to support the public works infrastructure spending, these sources of funding to support specific state water quality programs will be severely curtailed.

AFPA strongly suggests that an independent analysis of the scientific and technical bases of the Studds proposal, including a review of the assumptions and methodology used in the CRS study, be undertaken. A similar assessment of the state-by-state economic impacts of the proposal, taking into consideration the points raised above, is also warranted. Such an analysis should address both regional and national economic consequences of shifting public sector wastewater infrastructure costs to the private sector, as the Studds proposal would require.

Conclusion

The member companies of the American Forest and Paper Association recognize that there are legitimate public wastewater infrastructure needs that must be addressed. AFPA members believe that these needs are best addressed through the existing State Revolving Fund (SRF) program, and Congress should address the continuation of the SRF program through the Clean Water Act reauthorization process. The paper and forest products industry strongly objects, however, to the imposition of taxes on permitted industrial discharges, products, and agricultural inputs to meet state and local infrastructure needs mandated by the federal government.

The Studds proposal is not a "polluter pays" proposal because those hit by the taxes have already made, and will continue to make, enormous capital investments resulting in substantial water quality improvements. Rather, the proposal represents a shift in the funding burden from the public to the private sector. Those most dependent on public wastewater systems, and those with the greatest responsibility for resulting water quality impairments, would not be affected by the tax proposal.

AFPA believes the Studds proposal radically alters the historic private-public relationship under the Clean Water Act. Its likely economic consequences would inhibit economic growth and have a negative impact on jobs, consumer prices, and international competitiveness. For these reasons, AFPA's member companies strongly oppose this proposal.



National
Council of
Farmer
Cooperatives

SUBCOMMITTEE ON THE ENVIRONMENT AND NATURAL RESOURCES
COMMITTEE ON MERCHANT MARINE AND FISHERIES

U.S. HOUSE OF REPRESENTATIVES
WASHINGTON, DC

* HEARING ON *
* "CLEAN WATER FUNDING" *

February 18, 1993

WRITTEN COMMENTS
SUBMITTED BY THE
NATIONAL COUNCIL OF FARMER COOPERATIVES

March 2, 1993

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SUMMARY

The National Council of Farmer Cooperatives ("National Council") appreciates the opportunity to submit comments regarding clean water funding, and in particular the proposal for a National Clean Water Investment Corporation. The National Council is intrigued with the concept as one way to overcome critical resource constraints, and would welcome the opportunity to work with the Subcommittee on developing NPS management policies for agriculture, including initiatives to provide needed financial assistance. However, the National Council does not support the proposed fee on fertilizers and pesticides, whether to fund municipal treatment or NPS pollution management, and believes that such a fee would undermine ultimate water quality goals.

INTEREST OF THE NATIONAL COUNCIL

The National Council of Farmer Cooperatives is a nationwide association of cooperative businesses which are owned and controlled by farmers. Our membership includes nearly 100 major agricultural marketing, supply and credit cooperatives. National Council members handle practically every type of agricultural commodity produced in the U.S., market these commodities domestically and abroad, and furnish production supplies and credit to their farmer members and patrons. The National Council represents about 90 percent of the nearly 4,700 local farmer cooperatives in the nation, with a combined membership of nearly 2 million farmers.

The National Council places a high priority on development of policies that maintain and enhance the quality of surface and ground water resources through effective management of NPS pollution from agricultural activities, where problems are identified, in a manner compatible with food and agricultural policy objectives.

Agricultural cooperatives are uniquely positioned to work in partnership with the farmers and ranchers who are their members as they strive to address NPS pollution and other environmental challenges. A number of innovative initiatives, principally built around environmentally beneficial BMP's and IPM programs, are already underway, with promising results.

NATIONAL COUNCIL COMMENTS

Nutrients and Crop Protection Chemicals Critical to Production Agriculture:

In anticipating future debate about how to address management of NPS pollution from agriculture, a brief review of the roles of key agricultural inputs that are regarded as potential sources of pollution may be helpful to the Subcommittee:

- * Nutrients are basic building blocks that both plants and animals require in order to grow and survive. Natural soil nutrient replenishment processes include decay of organic matter, siltation (flood plains) and, yes, even lightning. Although nitrogen (N) is but one of 16 elements essential for plant growth, it is one of the most critical, in that yields are generally proportional to the amount of N available.
- * Natural supplies of N and phosphorous (P) in the soil are limited, and can be quickly depleted. These nutrients must be replenished and often supplemented to achieve acceptable yields on a sustainable basis. A number of sources of supplemental nutrients are available to farmers, such as manure, crop rotations (legumes and green "manure" crops), commercial fertilizers, sludge, etc.
- * Pesticides are crop protectants which comprise critical tools in the farmer's arsenal to supplement crops' natural defenses against a host of predators, competitors and diseases, which can cause major losses to the detriment of both farmers and consumers. Crops in the U.S. must compete with 10,000 species of insects, 1,800 different weed varieties, 18,000 species of fungi and 250 viruses. Even with effective use of all crop protection tools, nature's competitors typically cause a 25 percent yield reduction. Absent crop protection chemicals, potential crop losses can be 50, or even 100, percent.
- * The judicious use of supplemental plant nutrients and crop protection chemicals has helped American agriculture realize a doubling of yields in the past four decades.
- * One beneficial side effect is that agricultural producers have been able to respond to the growing food and natural fiber needs of an expanding population on reduced acreage, thus averting environmental pressures on more fragile lands that otherwise would be brought into production.

Management of NPS Pollution from Agricultural Operations:

Briefly stated, trace levels of pesticides and nutrients (principally N and P) are being detected in some water bodies at levels deemed to exceed acceptable levels under standards set by the Clean Water Act and other statutes. One of the potential sources of concern frequently cited is that of NPS pollution from agricultural operations (Note: Off-farm sources are also recognized, including septic systems, urban landscapes, natural vegetative decay, etc.).

The National Council and its member cooperatives are sensitive to the need to be part of the solution in managing NPS pollution. We believe that the operative goal of any successful policy response is as follows:

To maintain and enhance the quality of surface and ground water resources through effective management, on the farm and in the field, of NPS pollution from agricultural activities where problems are identified, in a manner compatible with food and agricultural policy objectives.

Exhibit 1 is a Statement of Principles endorsed by the National Council and other agricultural organizations, which we believe helps identify the challenge and portray important concepts which can form the basis for effective solutions. Our participation in the clean water policy debate will be guided by these important principles.

American farmers are generally anxious to be a constructive part of the NPS pollution management solution. However, given resource constraints, they cannot succeed alone. There must be a shared burden in responding. Farmers' basic needs are three-fold:

- (1) *sound information on what works;*
- (2) *technical assistance in tailoring the menu of generic solutions to site-specific circumstances; and*
- (3) *financial assistance, particularly for more capital-intensive options.*

The success or failure of any initiative to manage NPS pollution from agriculture will ultimately be determined by actual results in the field. These results will be dependent upon recognition of the following factors:

- * Farmers must be financially viable to implement NPS pollution management programs.

- * All nutrient sources can potentially cause NPS pollution, whether they exist naturally or are added to the soil; and therefore all sources must be properly managed.
- * To reduce N and P contamination, a systems policy approach is needed to ensure that reductions in one source are not offset by increases in another. The systems approach requires careful examination of both ag and non-ag, as well as both point and non-point, sources.
- * Recent ag-environmental initiatives, such as those of the 1985 and 1990 Farm Acts, have significant potential for addressing NPS contamination. Unfortunately, little or no funding has been provided in many instances. Great strides can be made in achieving NPS pollution management by adequately funding and administering these existing programs. Moreover, time is needed to evaluate the results of programs that have moved forward.
- * Adoption of Best Management Practices (BMP's) -- practices shown to give maximum productivity, input efficiency and environmental protection -- holds significant potential to address nutrient contamination and, at the same time, help contribute to the financial viability of the farm enterprise. Integrated Pest Management (IPM) programs offer similar benefits for crop protection chemicals.

CRS Proposal Highlights Need for Resources, but Proposed Approach Neglects NPS Pollution Management:

The National Clean Water Investment Corporation ("Investment Corporation") proposed by the Congressional Research Service (CRS) renders an important function in that it helps focus the policy process on the overwhelming need for resources at the local level to achieve national clean water objectives.

The sale of "Clean Water Bonds," with capital raised channeled into state revolving funds, is one concept that would appear to offer considerable potential, at least for municipal sewage projects. In these capital-intensive endeavors, it appears that the sale of bonds would in essence restructure the debt load over a longer period at reduced interest, to avoid bankrupting the locality. Certainly rural communities are in need of such assistance. As we understand it, the fund would be repaid by users of the system.

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The bond funding mechanism would likely have serious limitations if applied to funding of NPS pollution management responses. Agriculture in particular has many smaller-scale business units which cannot pass costs on by setting prices, or rates.

While the impetus for this proffered remedy is evidently in response to high costs of municipal water and sewer projects, the resource challenges identified are equally applicable to managing nonpoint source (NPS) pollution from agriculture and other activities.

Indeed, the National Council would suggest that the fourth principle cited by the proposal in governing disbursements -- "The allocation formula currently found in the Clean Water Act should be revised to more accurately reflect needs..." -- begs a critical question:

If nonpoint source pollution is believed to be a major priority in achieving clean water objectives, are disbursements of available funds commensurate with that view?

The significant resource constraints which the Subcommittee is attempting to address on the "urban" front are arguably even more acute when viewed in the context of emerging debate regarding nonpoint source pollution from agriculture and other activities. As noted in the introduction of the CRS proposal, \$75 billion in Federal, State and local funds have been contributed towards sewage treatment construction projects alone in the past two decades. By contrast, funding directed to managing NPS pollution has been minuscule; and at this juncture there are no initiatives evident that would alter this imbalance.

Will the policy process ultimately generate resources for NPS pollution management commensurate with the challenge, as has been the case for municipal projects? The National Council looks forward to working with the Subcommittee as future deliberations focus on this important question.

Proposed Fee on Fertilizers and Pesticides Inappropriate as Funding Source for Municipal Sewage Treatment, and Runs Counter to NPS Pollution Management Objectives:

The CRS proposal includes imposition of a "Polluter Pays" fee on the manufacture of active ingredients in pesticides and fertilizers, in order to generate \$1 billion annually as part of the Corporation's annual budget to service the bond debt and meet

other short-term needs. The stated rationale is that a greater share of the costs associated with water treatment would be borne by major sources of pollution.

The National Council would like to comment from two perspectives: (a) whether these farm inputs are a part of the municipal sewage treatment problem; and (b) applicability of this conceptual approach to agriculture and NPS pollution.

First, the National Council believes it is inappropriate to tax critical farm inputs to help finance urban-oriented solutions. While fertilizers and pesticides applied to the "urban/suburban" landscape may be characterized as contributing to municipal sewage treatment costs, we would submit that farm application of these important production inputs does not constitute part of the municipal treatment equation.

Second, even if funds raised in this fashion were to be directed instead to agricultural NPS pollution management initiatives, the National Council believes that in practice the initiative would actually run counter to environmental policy objectives, for several reasons:

- * Farmers, not manufacturers, will ultimately bear the cost of the fee imposed on the manufacture of active ingredients in pesticides and fertilizers. Why? Farmers are "price takers," as prices received for the products they harvest are dictated by supply and demand forces in the market. Thus, higher input costs translate into reduced net income for the farm family, hurting the financial viability of the farm operation, and leaving fewer dollars on the table to invest in longer term infrastructure improvements, such as NPS pollution management.
- * Farmers must be financially viable to have the capacity to be part of the NPS pollution management solution. The income picture for American agriculture has been grim for a number of years, and the prognosis for the near future is not promising. As a result, farmers have extremely limited capital resources.
- * NPS pollution management results related to the agricultural sector can only be accomplished on the farm and in the field, with hands-on involvement of the American farmer. In addition to their willingness to be part of the solution, farmers need three forms of assistance: sound information, technical outreach and supplemental financial resources.

* A fee on commercial fertilizers is inconsistent with the "polluter pays" principle cited in three important respects:

- (1) It would unfairly penalize farmers in areas where there is no NPS pollution problem;
- (2) It would penalize producers who have already taken aggressive steps to implement BMP's; and
- (3) It would inappropriately place the entire burden of addressing NPS pollution from agricultural operations on just one of several recognized potential sources. The approach seems to be based upon a premise that NPS management goals are advanced if farmers are forced away from commercial fertilizers, to increased reliance on nitrogen from "natural" sources. Yet studies have repeatedly demonstrated that water quality does not differentiate between nitrogen sources, and that indeed management of organic nutrient sources can pose greater operational challenges.

* Government programs are legitimate vehicles for providing financial assistance as a means of facilitating environmental objectives. The National Council endorses increased funding for the Section 319 program, along with improved efficiencies in that program. However, we do not believe it is appropriate to remove scarce funds already in the hands of producers, where they need to be, as a means of generating those funds. A fee on farm inputs is similar to taxing financially strained municipalities charged with constructing sewage facilities, as a means of raising funds to assist them.

No matter how efficient a government program may be, it cannot be as efficient, either in terms of timeliness or financial impact, as leaving available funds in place. Key challenges involve supplementing resources where necessary and providing incentives to encourage utilization of appropriate levels of existing funds on NPS pollution management.

CONCLUSION

In conclusion, the National Council believes the Subcommittee should abandon the proposal to impose fees on fertilizers and pesticides, whether for the proposed Investment Corporation, or to fund other water quality programs. Where agriculture and NPS pollution management are concerned, the objective should be to target necessary financial incentives as directly and efficiently as possible to assist farmers' implementation of cost-effective and environmentally sound remedies.

At this point, the National Council does not have definitive funding proposals to offer regarding the difficult resource challenges involved. Our Environmental Policy Committee is in the process of drafting a policy-oriented document based upon members' collective experience and understanding concerning identification and management of NPS pollution from agricultural sources. We will be pleased to share results of these efforts with the Subcommittee.

The National Council wishes to emphasize a strong desire to work with the Subcommittee in developing policies that enable American agriculture to be an effective and active part of the NPS pollution management solution.

March 2, 1993

EXHIBIT 1

PRINCIPLES STATEMENT OF THE CLEAN WATER ACT WORKING GROUP

American Farm Bureau Federation

American Feed Industry Association

American Nurserymen

American Sheep Industry Association

American Soybean Association

The Fertilizer Institute

National Agricultural Chemicals Association

National Association of Conservation Districts

National Association of State Departments of Agriculture

National Association of Wheat Growers

National Broller Council

National Cattlemen's Association

National Corn Growers Association

National Cotton Council

National Council of Farmer Cooperatives

National Farmers Union

National Forest Products Association

National Milk Producers Federation

National Pork Producers Council

National Turkey Federation

National Water Resources Association

U.S. Rice Producers

CLEAN WATER ACT REAUTHORIZATION: NONPOINT SOURCE PROVISIONS

In the reauthorization of the Clean Water Act, Congress should adhere to the following principles:

1. The Clean Water Act (CWA) does not stand alone in protecting America's waters from nonpoint source (NPS) pollution. Other ongoing programs at the federal, state and local level must be funded fully, coordinated with and not superceded by the CWA. This includes, in particular, the soil conservation and water quality provisions of the 1985 and 1990 farm acts and the state groundwater and surface water protection programs of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).
2. Recognizing the 20-year commitment our country has had to eliminating point-source pollution, success in reducing the more complex and diverse NPS pollution will require similar time and resource commitments. However, management of this problem will require a different approach than that of point source pollution elimination because, unlike point source pollution, NPS pollution is primarily a weather-related phenomenon that can be managed, but not feasibly eliminated. NPS pollution is caused by the inadvertent discharge of pollutants from a wide variety of society's most essential activities.
3. The central focus of NPS management solutions should be a reasonable and voluntary approach based on incentives, education and technical assistance as the primary means of managing NPS pollution.
 - NPS pollution management programs should (a) emphasize the protection of water resources and state-designated water uses, including state-designated agricultural uses, and (b) recognize the importance and needs of individual agricultural producers and other landowners affected by the CWA.
 - This approach emphasizes the use of locally designed and applied, economically feasible, site-specific best management practices which do not infringe on private property rights. Implementation of these farm management options over a realistic time frame will further the goal of reaching or maintaining designated uses of water bodies.
 - It is inappropriate to link USDA commodity, conservation or disaster program payments to the success or failure of management programs for NPS pollution authorized under the CWA.

4. Current CWA language contains valuable provisions for NPS management embodied in Section 319. Although this NPS section has been historically underfunded and has been hampered by bureaucratic roadblocks, all states now have approved Section 319 assessments and approved management programs. Within the CWA, it is the preferable vehicle for management of NPS pollution, and changes which occur during CWA reauthorization should reinforce these existing NPS provisions.
 - The proper management of NPS pollution lies in state and local efforts. As such, states should continue to identify and resolve their priority NPS water problems through administration of Section 319 funds. With state oversight and approval, local organizations should continue to carry out these NPS programs. Agencies at the federal and state levels should harmonize objectives and coordinate funding for national and regional NPS management programs.
 - State and local programs should provide for a mix of research, development, education and technical and financial assistance for both planning and implementing actions aimed at achieving state designated uses.
5. Management efforts funded by Section 319 of the CWA should be directed to priority areas based on scientific assessments that identify water bodies with impaired or threatened uses.
 - Priority, as determined by states, should be based on the magnitude of risk to human health, the protection of designated uses, and likelihood of further significant and unreasonable water quality degradation if no action is taken.
 - Strategies should be developed on a hydrologic unit, watershed-wide basis using an approach that includes the consideration of both surface and ground water quality.
 - Programs should focus on cost-effective, site-specific practices for individual operations with flexibility for implementation.
 - In order for Section 319 to work effectively for agriculture, USDA must play a lead role in the delivery of education and technical assistance at the state and local level.

6. An effective and cost-efficient response to water quality problems requires accurate and reliable information on (a) the source, extent, and impact of NPS pollution, as well as (b) the effectiveness, utility and economic feasibility of conservation measures and best management practices.
 - Any Clean Water Act reauthorization should include a strong financial commitment to further research, monitoring and assessment projects.
 - Monitoring should include before and after sampling as well as frequent sampling during storm events and assessment of natural and historic loadings.
 - Scientific research and monitoring projects should follow protocols developed by the U.S. Geological Service and should be conducted on a watershed basis with local and state input.
 - Representative pilot projects aimed at achieving market based incentives on a watershed or regional level should be encouraged.
7. The Clean Water Act Reauthorization should not directly or indirectly create a federal water quality law or program which supersedes, abrogates or impairs state water allocation systems and water rights.
8. Section 319 management programs on federal lands should be developed and implemented by the specific agency statutorily charged with management of the lands in question, rather than by regulatory authorities independent of that agency.
9. It is inappropriate for a reauthorization of the Clean Water Act to provide the authority for citizens suits against individuals participating in NPS management programs.

Statement by
Gary D. Myers
President, The Fertilizer Institute
House Merchant Marine and Fisheries
Environment Subcommittee Hearing
February 18, 1993



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Mr. Chairman, The Fertilizer Institute appreciates the opportunity to submit this written statement regarding the National Clean Water Investment Corporation proposal. TFI is a voluntary, non-profit association representing manufacturers, distributors and retail dealers of fertilizer products.

We believe the proposal as detailed in an August, 1992 paper is unfair to agriculture in two ways. First, it places a double tax on farmers, and it takes money out of the pocket of farmers and uses it to fund water and sewer projects in urban areas.

The double tax is imposed by forcing farmers first to pay for the use of important input products like fertilizers and crop protection products. While the August proposal claims this will have environmental benefits by reducing the use of these products, that is a false hope. USDA data shows fertilizer demand to be very inelastic. Even punitive tax levels do not significantly reduce use because of the tremendous economic benefit the products provide. So a tax on these products is a direct raid on the farmers' pocketbook.

Farmers are forced to pay a second time because the proposed waste tax raises the production cost of these important farm inputs. So farmers are being asked to bear an unfair portion of an unfair tax.

Mr. Chairman, this proposal only shifts money from economically-depressed rural areas into the urban areas, and has no environmental benefit. In addition, it is important for Congress to consider this proposal in light of the energy taxes already proposed by the Administration. Energy taxes also represent a double hit on agriculture. How much can we ask the farmer to bear?

Last year the Potash and Phosphate Institute, an industry-funded agronomic research association with scientists across North America, wrote an analysis of the Clean Water Investment Corporation proposal. I am submitting that paper and other documentation of the effect of this proposal on farmers for the record. Again, thank you for this opportunity.

EXECUTIVE SUMMARY
COMMENTS: A PROPOSAL FOR A
NATIONAL CLEAN WATER INVESTMENT CORPORATION

Potash & Phosphate Institute
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This proposal outlines methods of funding for a National Clean Water Investment Corporation whose purpose would be to finance state and local clean water projects. The proposal proposes to place a tax on industrial discharges on the manufacture of active ingredients in pesticides and fertilizers. Expected revenue from pesticides and fertilizer taxes would be approximately 1 billion dollars per year.

The proposal has been reviewed by the Congressional Research Service. That review is seriously flawed and reflects a lack of familiarity with agricultural production systems, the agricultural supply industry, current agricultural research and practices, the behavior of nutrients in soil and water, and the relationship of input prices to agricultural production and profitability.

The report errors in classifying pesticides and fertilizer nutrients (nitrogen and phosphorus) in the same category and labeling them chemicals that constitute environmental concern. Essential aspects of crop protection chemicals and plant nutrients in providing food and fiber needs of the U.S. and other countries are not effectively recognized. The authors are either under the impression that all plant nutrient nitrogen (N) and phosphorus (P) is provided by commercial fertilizers or that the forms of these nutrients supplied by commercial fertilizers represent a threat to the environment.

Authors of the report admit that limitations of available data create difficulty in estimating impacts of pesticide and fertilizer tax proposals on either manufacture of the materials or their use. References to low input agriculture and the possibilities for reducing nutrient use by imposition of punitive taxes reveal a lack of understanding of the essentially straight line relationship of nutrient requirements and crop yields.

Authors are either ignorant of or ignore the dominance of nutrient sources in the environment associated with soil components such as soil organic matter. Those nutrients and nutrients from commercial fertilizers behave in similar fashion in terms of plant nutrition and any potential impact upon environmental quality. Singling out a particular portion of those nutrients, in fact the portion which is already best managed by farmers, for punitive taxation is unrealistic and counter productive.

Ultimately, costs proposed by taxes in the plan would be paid by the American farmer. Authors incorrectly guess that impacts would be small but in fact N prices would rise 13 to 24 percent and P prices would increase approximately 12 to 13 percent. Those values translate to production cost increases of \$5 to \$8/A for corn and \$2 to \$4.50/A for wheat aside from increased production costs incurred through higher prices of pesticides. Net income per acre would be reduced approximately 3.6 to 5.7 percent for corn because of the increased N and P prices and approximately 4 to 10 percent for dryland wheat. Reduced inputs will result in lower crop production and profitability and will be highly unpalatable to farmers.

Punitive taxation, leading to reduction of farm productivity and profitability fly in the face of farmers' already having implemented best management practices (BMP's) aimed at maximizing nutrient use efficiency. Conservation tillage, precise N placement, sidedress and starter N applications, use of plant analysis, nitrate soil testing, use of nitrification inhibitors, variable rate fertilization, nutrient balance, P placement, and erosion control represent a few of the best management practices already in place.

Inputs necessary for required yield increases must not be limited in terms of availability or cost by imposition of punitive taxes that are based on suppositions about environmental protection rather than sound scientific principles. Agricultural research has provided the scientific principles and best management practices for efficient production and environmental protection. Extension education and the educational efforts of the agricultural supply industries have resulted in the adoption and use of BMP's with positive benefits for everyone.

Comments: A Proposal for a National Clean Water Investment Corporation

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This proposal outlines methods of funding for a National Clean Water Investment Corporation whose purpose would be to finance state and local clean water projects. The proposal would place a fee (tax) on industrial discharges and on the manufacturer of active ingredients in pesticides and fertilizers. Expected revenue from pesticides and fertilizers would be approximately 1 billion dollars per year.

This proposal and the Congressional Research Service review are seriously flawed and reflect a lack of familiarity with agricultural production systems, the agricultural supply industry, current agricultural research and practices, the behavior of nutrients in soil and water, and the relationship of input prices to agricultural production and profitability. This review will address those points.

Separation of Fertilizers From Pesticides and Other Chemicals

The report repeats the error of classifying pesticides and fertilizer nutrients (nitrogen and phosphorus) in the same category and labeling them chemicals that constitute environmental concern. The author(s) fail to recognize the essential aspects of both crop protection chemicals and plant nutrients in providing food and fiber needs of the U.S. and other countries. The United States Department of Agriculture (USDA) has estimated that increased yields ranging from approximately 50 to 100 percent of current levels will be required to meet the country's needs by the year 2030. Crop protection chemicals (pesticides) and increasing amounts of plant nutrients will be required to meet those needs. Apparently, authors of this report are either under the impression that all plant nutrients nitrogen (N) and phosphorus (P) are provided by commercial fertilizers or that the forms of these nutrients supplied by commercial fertilizers represent a threat to the environment.

The authors admit that because of limitations of available data (and understanding) it is difficult to precisely estimate the impacts of pesticide and fertilizer fee (tax) proposals on either manufacture of the materials or their rate of use. By citing references to low input agriculture and the possibilities for reducing nutrient use by imposition of taxes of 100 to 300 percent of product price, the authors reveal a lack of understanding of the essentially straight line relationship of nutrient requirements and crop yields.

These assumptions ignore the large amounts of nutrients in the environment associated with soil components such as organic matter. Those nutrients and nutrients from commercial fertilizers behave in similar fashions in terms of plant nutrition...and any potential impact upon environmental quality (Tisdale, et al., 1985). To single out a particular portion of those nutrients, in fact the portion which is already best managed by farmers for punitive taxation is unrealistic and counter productive.

Discussion of the roles of pesticides and plant nutrients in the environment must be separated because of the vast difference in their actions. Further, another important plant nutrient sulphur (S) has been classed with pesticides. Sulphur is the fourth nutrient required by plants (in terms of quantity and frequency) and is frequently labeled the fourth macronutrient. Fertilizer S must not be included in this category.

Origin

The fertilizer industry was established in response to a need for nutrients beyond those readily available on the farm (manure, legume N) and frequently championed by low input agriculture enthusiasts. The pesticide industry developed in response to a need to control the pests which reduce potential yield and quality of crops produced by farmers. These industries have grown, changed, and adapted in a continuing effort to meet the need of farmers and, ultimately, consumers. As potential threats to the environment through use of these products have been identified, industry, agricultural supply dealers, and farmers who use the products have changed their practices to reduce the potential for problems. Practices and inputs determined through scientific study to be unsafe have been eliminated.

Fee (Tax) Effects on Growers

Ultimately the costs proposed by the plan would be paid by the American farmer. Although the authors guess that impacts would be small, N prices would in fact be raised approximately 13 to 24 percent and P prices would increase approximately 12 to 13 percent. That would translate to cost increases of \$5 to \$8 per acre for corn and \$2 to \$4.50 per acre for wheat aside from the increased costs that would be incurred through higher prices for pesticides. Net income per acre would be reduced from approximately 3.6 to 5.7 percent for corn because of increased N and P prices and approximately 4 to 10 percent for dryland wheat. Farmers will find these increased costs and lowered profitability highly unpalatable. Reduced inputs will have a direct effect in terms of reduced crop production and profitability will be affected even more strongly (USDA-ERS, 1990; PPI, 1992).

Nutrient Balance

Without quoting specific values, the proposal recognizes that U.S. fertilizer nutrient consumption peaked in 1981 and since that time has undergone substantial reduction. (Table 1) Reductions in nutrient use reflect several factors—reduced acreage of various crops through set-aside programs, increased nutrient use efficiency related to higher yields, more effective methods of application, split nutrient application rates, and various other best management practices (BMPs). Further, other BMPs of early planting dates, improved hybrids, better weed and pest control, and higher, more uniform plant populations have contributed to improved nutrient use efficiency.

Definition of the term "conventional agriculture" at this point is essential. Today's conventional agriculture is composed of modern, site specific, progressive, science-based production systems in which available and applicable technologies and inputs are used effectively and efficiently. Conventional agriculture shows both its concern for the environment as well as profitability.

The proposal indicates, "The full range of consequences (of higher input costs or input reduction) are beyond the scope of this analysis and are constrained by the types of data limitations previously described." Continuing, "With agriculture representing the largest single sector user of pesticides and fertilizers, impacts of pesticides and fertilizer fees (taxes) would be greater in agricultural production states than elsewhere."

The proposal points out that corn and wheat are major fertilizer-using crops. It notes that corn production is centered in Illinois, Iowa, Indiana, and Nebraska which combined in 1990 to consume approximately 56 percent of N and P fertilizers applied to that crop. Considering crop production and nutrient use in those four states, nutrient balance (added versus removed in crops) for N, P, and potassium (K) computed for 19 crops revealed some interesting trends. Two of the four states have slightly positive N balances, all have either zero or strongly negative P balances, and net K balance of the four is strongly negative (Figure 1). This indicates that crop production in those states and in fact for the entire nation as a whole is removing more P and K than is applied while producing a slight positive balance for N. The implications of these data are that further reductions in the use of P possibly brought on by a clean water tax further deplete our productive capability and have serious negative environmental impacts.

The wheat producing states of Kansas, Oklahoma, Texas, North Dakota, South Dakota, and Minnesota collectively have strongly negative nutrient balances for N, P, and K (Figures 2-3). The implications of this negative nutrient balance for those states are identical in terms of productive capacity.

Risk Characterization

The proposal report suggests that N and P can enter surface and groundwaters at any point in their use cycle...during manufacture, distribution, storage, and use on the land. The proposal points out the potential for surface and groundwater contamination from accidental spills, leaks at manufacturing facilities, distribution sites, and commercial applicator facilities. Unrecognized in those statements is the effort that has been and is being expended by the fertilizer and pesticide industry in controlling potential environmental impacts of these materials. Evidence of the attention given to environmental protection from the agricultural supply industry was documented in the Proceedings of the National Agricultural/Environmental Conference sponsored by the Tennessee Valley Authority in August, 1992 (TVA, 1992).

The fertilizer industry, with guidance and direction from TVA, has taken the lead on the development of standards for fertilizer dealers to follow for the containment and storage of fertilizers. Pilot programs are underway across the country and fertilizer dealers, at their expense, are making the necessary changes in their facilities to meet these standards.

The report alludes to a larger secondary category of water contamination from application of pesticides and fertilizers to crops, rangeland, forests, lawns, and other areas. The generalized statement relative to movement of these materials within the environment is a gross over-generalization and reflects lack of understanding of soil and water chemistry and erosion control.

Nitrogen Use and Nitrate in Groundwater

The proposal suggests a particular vulnerability of surface and groundwaters to pesticides and fertilizers. The authors state that "nitrogen and nitrates" tend to be water soluble and readily move into surface water and groundwater. Fertilizer N sources are quickly connected to nitrate in groundwater and methhemoglobinemia (blue baby syndrome) without apparent recognition of the similar fate of all sources of nitrogen, regardless of original form and without documented evidence of fertilizer N producing cases of methhemoglobinemia (Hoef, 1990).

The authors also tie P and N from fertilizers to eutrophication of surface waters with apparent lack of recognition of identical effects of all sources of these nutrients.

Risk characterization in this report implies that increased use of N fertilizers over the past 40 years has or will possibly result in increased nitrate in groundwater in the future. There is no question that in some areas, use of commercial fertilizer N as well as other N sources has had an impact on nitrate in

groundwater. However, this is not a new problem and many other factors affect nitrate in water including geologic N concentrations.

Thirty years ago in the early 1960's, nitrate problems in plants and water supplies were considered to be a major concern and attempts at that time were made to lay these problems at the feet of N fertilizer use. However, research in the Midwest at that time indicated little evidence that N fertilizers were responsible or related to high levels of nitrates in water or in plants under normal conditions (Smith, et al., 1964; 1965). Smith and co-workers concluded that nitrate in rural water supplies appeared to come mainly from waste disposal systems or from livestock feeding operations. Well contamination with nitrate was also strongly correlated to shallow well depth and poor casing.

Thirty years later, conclusions remain the same. Pennington (1990) pointed out that efforts to understand and evaluate groundwater nitrates from computer models (Nielsen and Lee, 1987) suffer from several shortcomings including a lack of effort to utilize information related to crop removal of N, and the assumption that if crops are planted, then national average fertilizer rates are applicable in all areas. If that assumption were true, then Texas would be applying 2.1 million tons of N per year instead of the current 0.8 million tons (TVA, 1991b).

An even more recent survey of nitrate in water supplies was conducted in Ohio. Baker (1992) pointed out that information on nitrate contamination in local areas can support the development of locally appropriate responses to concerns regarding agricultural contamination of groundwater. His conclusions included the following:

- The extent of nitrate contamination in rural wells varies greatly from region to region.
- In most areas, nitrate contamination is uncommon.
- Minimal nitrate contamination is present in many areas of intensive row crop agriculture, while areas of more extensive contamination occur both in agricultural and non-agricultural regions.
- Shallower and older wells are more likely to be contaminated than deeper and newer wells; springs, driven wells and dug wells are more likely to be contaminated than drilled wells.
- Where contamination is present, nitrate-nitrogen concentrations also exhibit considerable month to month variability, especially when the wells are tapping shallow aquifers and/or suffer from faulty construction.

- The question of appropriate nitrogen management in a given area depends not only on the current extent of nitrate-nitrogen contamination in that area but also upon local trends in contamination.

Baker's data representing 34,000 rural residence from 276 counties in 15 states indicate that nitrate-N concentrations in excess of the standards set by EPA were present in only 3.8 percent of the wells tested (Figure 4).

The reports implied trend of more fertilizer N causing higher incidence of nitrate in groundwater, was not found to be the case in studies conducted by Texas A&M University. Texas data (Pennington, 1989; 1990) show that nitrate-N concentrations exceeding the EPA 10 ppm standard were prevalent in water supplies in the state as early as 1896, long before N fertilizer use began. In fact, summaries of Texas data for the periods 1896-1950, 1951-1970, 1971-1990 show the percentages of wells testing greater than 10 ppm nitrate-N were 9.93 percent, 8.35 percent, and 7.65 percent respectively (Chamala, 1991). Pennington correctly emphasized that it is essential to have water nitrate-N concentration data for periods prior to the introduction of N fertilizers to be able to draw meaningful conclusions. Pennington concludes that Texas water data show that groundwater nitrate problems are related to natural phenomena or are influenced by the initiation of cultivation or both (Eck and Jones, 1990; Lamb, et al., 1990).

Before connections of agricultural use of N and nitrate accumulation in groundwater are attempted, authors of reports such as this should be familiar with agricultural research findings. Information reported by Westerman (1990) demonstrates that proper N management in crops such as winter wheat is extremely important to achieve optimum yields and minimizes risks of nitrate-N accumulation and movement to groundwater, lakes, and streams. Nitrate accumulation in soils from long-term soil fertility experiments under continuous winter wheat demonstrated that significant nitrate-N accumulations in soil did not occur unless the N fertilizer recommendation rate grossly exceeded CURRENT N RECOMMENDATIONS. In wheat production systems with an average rainfall of 28 to 32 inches per year respectively, the N rate for optimum yield coincided closely with the most environmentally acceptable N rate. Similar data exist for cotton (Westerman and Boman, 1989) grain sorghum (Onken, 1990), corn (Hooker, et al., 1983; Ludwick, et al., 1976), and sugarbeets (Cattanach, et al., 1990).

Data collected over the past 20 years in North Carolina indicate that no nitrate-N problems exist in groundwater below cultivated fields which have been fertilized in a manner consistent with recommended crop production practices. This does not preclude a problem where higher than normal rates of N may have been applied such as in an effort to dispose of animal waste or other organic materials (Gilliam, 1991).

Accumulation of nitrate-N in the soil from any nitrogen source is strongly affected by the availability of other nutrients, including P. A 30-year irrigated corn and grain sorghum study in western Kansas continues to emphasize the importance of P for irrigated crop production and N use efficiency. This study has demonstrated conclusively that P use is essential for increased yield, increased crop response to N, and diminished nitrate-N accumulation in the soil (Schlegel and Dhuyvetter, 1992). Other studies have reported similar results (Whitney and Lamond, 1989; PPI, 1989; PPI, 1990).

Over the years, data from the Kansas study have indicated that maximum corn yields were achieved with N application rates of about 160 lb/A. At that optimum N rate, application of P has continued to increase its effect on corn yields (Figure 5). In 1991, P increased yields 117 bu/A for a top yield of 206 bu/A.

This study provides strong evidence of how agricultural research has provided corn growers with useful information for improving economic return from the crop and maximizing N use efficiency. The effects of proper rates of N application with added P on nitrate-N accumulation in the soil over a 30-year period are dramatic (Figure 6). Soil sampled to a depth of 10 feet showed a net accumulation of 224 lb nitrate-N/A at a rate of 160 lb N/A without added P. When P was supplied, the accumulated amount of nitrate-N was only 48 lb/A for irrigated corn. Grain sorghum production resulted in similar soil nitrate accumulations but with even more dramatic P effects.

These same studies were sampled in 1973 and a comparison of the data from that date versus 1990 sampling provides an interesting comparison (Figure 7). Phosphorus had the same positive effect on controlling nitrate-N accumulation. Soil nitrate-N levels in the plots receiving 160 lb N/A plus 40 lb P_2O_5 /A actually declined slightly over that 17-year period. Without P, soil nitrate-N accumulations rose about 60 lb/A, which represents only about a 4 lb/A accumulation per year.

Commercial N use efficiency is improving (Wallingford, 1991) as farmers adopt BMPs developed through scientific research and promoted through current educational programs (Figure 8). Conservation tillage, precise N placement, sidedress and starter N applications, use of N tissue testing, nitrate soil testing where appropriate, use of nitrification inhibitors, better genetic material, more optimal planting dates, and balanced fertilizer programs represent BMPs which are increasingly utilized by farmers for more efficient production and environmental protection. Each BMP contributes to greater N use efficiency and less carryover nitrate-N.

A major decrease in principal crop acreages and a rather constant amount of N used per acre has resulted in a significant decrease in commercial nitrogen use over the past 10 years (Table 1). The fact that commercial N use declined is in

sharp contrast to unfounded claims of rapid increases, over use, miss management, and is related to improved nitrogen use efficiency (TVA, 1991a, 1991b).

A recent Iowa study indicates that farmer applications of commercial fertilizer are not the primary source of nitrate in the Des Moines River (Keeney, 1992). In fact, nitrate levels detected in the Des Moines River in 1945 were similar to today's levels, pointing to the existence of nitrate in the river prior to wide-spread use of commercial fertilizer. Iowa report suggests that nitrate produced in the soil from organic matter mineralization is a major source of nitrate in both groundwater and surface water. Commercial N use has not materially effected nitrate levels.

Nitrogen Sources and Management

The assumptions of this report in regard to N sources in the environment and in water are alarmingly simplistic and ignore contribution of soil organic matter, legumes, manure, sewage sludge, as well as other organic and inorganic sources to nitrate and ammonium-N in soil and water. Soil organic matter is an important component of soil fertility, soil structure, cation exchange capacity and water holding capacity (Tisdale, et al., 1985). Maintaining organic matter in the soil is essential for crop production and consequently organic matter will always deliver significant amount of inorganic N to the soil (and water) system through mineralization (Follett, et al., 1987; Havlin, et al., 1990).

Cabrera and Kissel (1988a, 1988b), Myers (1988), Vigil (1989), Vigil and Kissel (1990) have published on the mineralization of N from organic matter. Kissel (1991) pointed out that nitrates are formed in soil from highly decomposable, N-rich organic substances such as soil organic matter, manures, and decomposing crop residues of legumes and immature grasses often used as green manures.

In many crop production systems, Kissel (1991) points out the available N supplied from these sources exceeds the amount applied as N fertilizer. In dryland crop production systems in the central Great Plains, the majority of N available to dryland wheat and dryland grain sorghum would typically come from decomposition of soil organic matter and crop residue. As an example, a 40 bu/A dryland wheat crop would require about 100 lb of N from all sources, over half of which would be supplied from mineralization of the organic sources of nitrate remaining in the soil from previous crops. Kissel and Cabrera (1991) cite data indicating N mineralization of as much as 96 lb/A for a 104 day period during the summer...data from areas with no crop residue or low N residue.

Black and Bauer working at the USDA-ARS Northern Great Plains Research Lab in Mandan, ND have extensively studied crop N requirements (Bauer, et al., 1987a, 1987b, 1988) and sources of N for plants. In a letter communication

(Black and Bauer, 1991), they pointed out that there are about 38 million acres of summer fallow in the Great Plains which produce, conservatively, 100 pounds of nitrate-N per acre from soil organic matter annually, or about 3.8 billion pounds of nitrate-N (1.9 million tons of N). The following year, an additional, adjoining 38 million acres go through the same procedure. They also note that nitrate-N produced from soil organic matter during fallow is more likely to leach to soil depths below the wheat root zone during the 14 or 21 month fallow period when no crops are grown on the land compared to fertilizer N which is applied shortly before seeding, at seeding or during crop growth when the crop is using both water and N.

North Dakota data indicate that large amounts of nitrate-N accumulated in the soil from the effects of organic matter decomposition native grassland was converted to cropland. Dahnke (1991) has reported information showing nitrate-N accumulations over 600 lb/A to a depth of 10 feet 10 years after break-out of prairie into cropland (Table 2). That information supports the report of Powelson (1988) emphasize the importance of organic sources of N in soil-nitrate accumulations. No fertilizer N was applied at any time to this area.

Agricultural scientists, well aware of the accumulation of nitrate in the soil and faced with the need to improve water use efficiency in cropping systems, have been developing systems which solve both problems simultaneously (Halvorson, 1990; Lamb, et al., 1990). Black and Bauer (1991) point out that a spring wheat-fallow system used in the northern Great Plains, receives about 32 inches of precipitation in a 2-year period but precipitation use-efficiency (PUE) of the rotation averages only about 40 percent (Halvorson, 1990). More intensive annual cropping systems such as spring wheat-winter wheat-sunflower have increased the PUE to 80 to 85 percent. The opportunity for precipitation to move below the root-zone is much greater in the crop-fallow than the annual cropping sequence and recovery of mineralized and fertilizer N is improved.

Recently, Colorado researchers (Westfall, et al., 1990; Peterson, et al., 1991) have developed successful intensive cropping management systems for the central Great Plains which have the same effect as the North Dakota studies. Using systems of winter wheat-no till corn-millet-fallow instead of wheat-fallow - wheat, water use efficiency has been improved, yields increased, production costs per unit reduced, soil nitrate concentrations reduced, erosion control improved and profitability enhanced. But, these systems require greater use of commercial N fertilizers. Greatly increased cost of N due to fees (taxes) imposed by this proposal would jeopardize adoption of these highly desirable cropping systems.

These types of studies indicate what must be recognized in proposed regulations. Systems are already in place or are being developed by agricultural scientists which improve N use efficiency (Gelderman, et al., 1990), water use

efficiency, profitability and environmental protection. Incentives based on sound science and economics are far more desirable and practical than nutrient use reduction resulting from fee imposition.

Long-term studies at the Rothamsted Experiment Station in England (Powelson, 1988) show that the sources of most leached nitrate are organic matter and crop residue...not applied commercial fertilizer N. Wheat straw, corn stalks, cover crop residue, and other materials become a part of the dynamic N cycle process. Temperature, rainfall, cropping sequences and many other factors play a role in the N cycle processes.

All N sources must be taken into account in estimating N needs by crops (Power and Broadbent, 1989; Schepers et al., 1988; Schepers and Fox, 1989). That process is not a simple one. Any discussion or consideration of N budgets must take into account the work of leading agricultural scientists from USDA and Land Grant Universities.

The proposal totally ignores legumes, a major N source in crop production and the environment. Weber (1975), a USDA-ARS scientist, estimated the amount of N-fixation by legumes to be 11.9 million tons annually in the United States. That figure alone surpasses by almost 1 million tons, the amount of commercial N applied to crops.

All N sources when applied to the soil, are gradually transformed by soil organisms to inorganic ammonium and nitrate ions. Plant roots utilize both of these N forms. Crops utilize available soil N independently of the original source. All N sources can maintain crop yields and quality, provided other recommended BMPs are followed.

Nitrate is the N form found in groundwater because ammonium is held by soil particles and is not subject to downward movement (leaching). Nitrate-N remains free in the soil and can be leached with water lowering utilization by crops or soil micro organisms. Nitrate is present in soil regardless of the form of N applied...or if none is applied, because the soil is a dynamic biological system which produces nitrate from mineralization of soil organic matter.

Management of N from legumes may be even more difficult than managing N from commercial sources. Russelle and Hargrove (1989) and Randall (1985) have pointed out that nitrate leaching hazards from organic N sources such as manure and legumes can be significant. Successful use of these N sources to supply adequate N to a growing crop while minimizing losses requires equally careful management as with inorganic N sources. Simply replacing commercial fertilizer N with these sources will not ensure a reduction in nitrate leaching. Hargrove, et al. (1984) cited data indicating a greater leaching potential from a system involving a legume cover crop than from systems involving fertilizer N

and a rye cover crop. Based on analyses of other studies, Russelle and Hargrove point out that a number of factors complicate N management comparing legumes to commercial fertilizer N including temperature, soil moisture supplies and the effects on rate of tissue decomposition.

Commercial N supplies a majority (64 percent) of the approximately 17 million tons of total N applied for crop production in the U.S. (Figure 9). Prior to 1940, however, N needs for crop production were supplied mostly by legumes, crop residues, and animal manures. As U.S. demand for food, feed, and fiber increase, more and more fertilizer N was required to meet the increased demand. This expansion of commercial fertilizer N use peaked in the 1980's.

Some proponents of low input agriculture have suggested that replacement of significant amounts of commercial fertilizer with animal manure or forage legumes would result in less potential for nitrate accumulation in ground or surface water. But in fact, there is little scientific basis to recommend that farmers switch from one N source to another for environmental reason. It might be surprising to note that organic sources (manures and legumes) often tend to produce higher soil nitrate levels than commercial sources (Ellis, 1988; Randall, 1989). The use of organic N source for crop production requires equal or greater management intensity than does commercial N to obtain efficient utilization. Decomposition of organic matter and release (mineralization) of organic N takes place whenever soil conditions are favorable. That may be about the same time as crop uptake occurs but it may occur both far in advance of and far after plant use has ceased for that year. Application timing and placement of fertilizer N have improved in recent years, giving the farmer better control of that N source. With the use of sidedressing and N extenders (nitrification inhibitors), N fertilizer use has been further improved (PPI, 1990; Follett, et al., 1987). These measures are largely inapplicable to other N sources emphasizing their substantially greater environmental impact.

Penalizing the use of controllable commercial N by the imposition of fees (taxes) would have other significant, negative environmental impacts. Replacement of significant amounts of commercial fertilizer with animal manures or forage legumes would require major shifts in farm enterprises in crop producing areas (Table 3). There are no environmental benefits for encouraging such diversification. Iowa farmers would have to increase animal numbers from 2 to 9 times (depending upon animal type) to replace one tenth of the commercial N now used (PPI, 1989). Pennsylvania, on the other hand, has a farm economy already dominated by livestock enterprises (Van Dyne and Gilbertson, 1978; PPI, 1989, Russelle and Hargrove, 1989). Most farmers adjust N fertilization practices to account for on-farm N availability based on recommendations from governmental or commercial laboratories (Keeney, 1985; PPI, 1990).

A survey of wells in Iowa and Pennsylvania showed little difference in the percentage of wells with nitrate-N levels above the EPA proclaimed level of 10 ppm nitrate-N even though commercial N use in Pennsylvania is three times greater in Iowa (Soileau, 1988). Pennsylvania farmers use about one-third the amount of commercial N per acre as Iowa farmers, adjusting their application rates downward to account for the greater N available from animal manure and legumes in their livestock systems.

Assessment of manure nutrient content in North Carolina indicates that this important nutrient source can represent substantial percentages of plant nutrient requirements in certain areas of that state (Zublena and Barker, 1992). In 1989, approximately 20.7 million tons of animal manure were generated in North Carolina. Because many animals are not confined, only about 52 percent of the manure can be collected for use. In 1989, manure contained the equivalent of 158,000 tons of N, 108,000 tons of P_2O_5 , and 31,000 tons of K_2O . Estimates are that 20 percent of the N, 40 percent of the P_2O_5 , and 29 percent of the K_2O are available for plant use because of loss, mineralization and distribution problems. Still, Zublena and Barker point out that manure-derived nutrients can supply 15 percent of needed N, 55 percent of P_2O_5 , and 39 percent of K_2O requirements for agronomic crops and pasture. Incorporation of this information into recommendations for nutrient use reflects two things, (1) the significant input of nutrients through the environment from sources other than commercial fertilizers, and (2) recommendations for agriculture that account all sources of nutrient availability.

These important facts emphasize the point that switching N sources has no effect on needs for proper management and environmental care. Punitive fees (taxes) on commercial N use would do little except increase costs for farmers, lower productivity and profitability, and increase the difficulty of environmental management.

Phosphorus Sources and Management

The authors of the proposal and report erroneously equate the fate of pesticides, N and P in the soil and water without apparent recognition of the tremendous differences in reactions these materials undergo in the environment. The report states, "When pesticides and fertilizers are applied to the land, they may be transported above, across, and through the ground by wind, rainfall, runoff, and infiltration. Chemicals dissolved in runoff water are carried to nearby surface water or may enter groundwater through direct infiltration as well as through sink holes or abandoned wells." The report continues, "Surface and groundwaters are potentially vulnerable to contamination by pesticide and fertilizer chemicals."

These statements indicate a lack of understanding of the behavior of P in the ecosystem or represent a gross simplification. Phosphorus is an essential nutrient for all forms of life. However, P has also been associated with environmental problems, primarily through the eutrophication of lakes, bays, and non-flowing water bodies. There are many sources of P which move into surface water bodies. Sewage, industrial wastes, detergents, drainage water, soil erosion, animal wastes, plant residues of all types, fertilizer, and a great many other sources contribute to P in water. Eutrophication is a natural process which has been going on as long as there has been plant and animal life. All of the coal, oil, peat, and muck bogs in the world were created by the eutrophication process. For instance, the state of Minnesota alone has over 7.5 million acres of peat bogs containing 6.8 billion tons of peat with a P content of approximately 5.5 million tons. That P originated from natural processes of soil erosion and decomposition of plants and animals (Sharpley, 1985; Wadleigh, 1968).

Phosphorus losses from agriculture in general represent a problem that is already being addressed. Some P can enter surface water by runoff from areas of high animal concentration. However, soil erosion is the main avenue of movement of P into surface water bodies. Leaching of P through soils into groundwater is essentially nil because of the strong bonding reactions of P with other soil compounds and soil particles. Phosphorus has a low solubility in water but natural weathering of soils and rocks does contribute some P to surface waters (Chesters and Schierow, 1985).

Since soil erosion is the major pathway for P loss, when erosion is minimized, so are the losses of P to the environment. Any soil conservation technique effective in reducing soil erosion will also reduce P losses. Terraces, contour ridges, grass waterways, and buffer strips are examples of structural techniques for erosion control. Conservation tillage systems such as no-till, minimum till, and ridge tillage are also effective in cutting erosion and P losses and are the most practical and economical method for most farmers to implement.

Some research has shown that the concentration of P can be higher in runoff from fields with conservation tillage compared to more intense tillage because of the P released from decaying plant residue on the soil surface and other factors. The total soil loss of P is much lower, however, because conservation tillage is so effective at reducing the amount of water leaving farmland.

Concerns over the loss of valuable topsoil and the potential contamination of surface water supplies from soil erosion along with the need to more efficiently utilize water resources, have prompted farmers to adopt conservation tillage systems. That adoption has been furthered by the compliance aspects of the 1990 Farm Bill. Reduced tillage and no-till systems have been in place in many farms for over 20 years in an effort to control erosion. University researchers and Extension specialists, in cooperation with the chemical and farm machinery

industries, have worked closely with farmers to develop and refine management systems to make reduced tillage work. These practices have become the conventional systems in many erosion-prone areas and represent a highly significant control mechanism already in place which has dramatically reduced erosion and P losses from all sources to surface water supplies (Reetz, 1990).

Although not as important at soil conservation, fertilizer management is used as a tool for reducing P losses. The first step in phosphorus management is to determine the relative P status of the soil by soil analysis. If the soil has inadequate levels of P for optimal plant growth, then corrective applications must be made to raise the soil test P level to the sufficient range. If P soil test levels are in the high range or above, then application rates should equal crop removal (Murphy, 1985). However, voluminous data indicate that soil test alone is not the only indicator of the need for supplemental P (Fixen and Sorenson, 1984; Fixen, et al. 1985; Giordano and Mortvedt, 1978; Jones and Fox, 1978; Munson and Murphy, 1986). Placing fertilizer phosphorus near the seeds of crops (starter) has been repeatedly demonstrated produced increased yields and profitability even at high P soil tests under conditions of early planting, cold, wet soils, high amounts of residues, and varies with specific crop requirements (Wallingford, 1986; Ghodrati, 1983; Schulte, 1982; Touchton, et al. 1987).

Using the best fertilizer placement technique is especially important in conservation tillage systems for reduction of P losses. Sub-surface band applications of P fertilizer help reduce the amount of P lost in surface runoff (Andraski, 1985; Murphy, 1985; Langdale, et al., 1985). Since there are fewer opportunities to incorporate surface applied fertilizer P in conservation tillage systems, banding the P beneath the soil surface has been shown to increase efficiency of P use compared to broadcasting on the soil surface. Subsurface placement also serves to limit fertilizer exposure to any surface water leaving the field (Barber, 1983; Rehm and Sander, 1981; Fixen and Leikam, 1988; Fixen and Sorenson, 1984; Murphy and Dibb, 1986; Kovar and Barber, 1987; Leikam, et al. 1983).

Some of the most serious environmental impacts of agriculture have been caused by improper storage and disposal of animal manures. Manure and sewage sludge contain relatively high concentrations of soluble P. If manure and sludge remain on the soil surface exposed to rainfall, the potential for the loss of P in organic compounds to surface water is high. Incorporation into the soil as soon after application as possible limits P losses (Logan, 1992; Virginia DSWC, 1990).

In the final analysis, it is clear that P in the environment results from contributions from many sources. Punitive fees (taxes) on the use of commercial fertilizer P will not serve to control P losses to surface water bodies. Those fees will have negative effects on P use with resulting decline in productivity, slower

plant growth and more soil exposure to rainfall, increased erosion, and subsequently degraded water quality from both sediment and nutrients which are adsorbed on soil particles. This proposal ignores contributions to the environment from sewage sludge, animal manures, and all other P sources in society and is neither equitable or practical.

Fertilizer Management Advances

Increased use of soil testing is a BMP that has helped reduce production cost per unit and make more efficient use of applied nutrients. While not a perfect system, soil testing is a scientific input into the process of determining fertilizer application needs. Plant analysis provides another tool for determining nutrient use efficiency and for diagnosing crop needs for future nutrient applications. Both are widely used in conventional agriculture and have been for many years (Reetz, 1990).

Farmers are using more detailed soil sampling grids to gain a better understanding of the variation of fertility levels within their fields and to adjust application of fertilizers according to site needs. Researchers have found major benefits from managing fertilizer application for specific areas within fields (Buchholz and Wollenhaupt, 1990; Leikam, 1990; Schmitt and Fairchild, 1991; Jacobsen, et al., 1988). Benefits of fertilizer management for specific areas within the field include improved production, increased profit and fertilizer use efficiency as well as environmental protection. Systems for managing fertilizer applications within a field can be termed prescription farming, farming by soil type, farming by the grid, and other terms.

In this process, areas of similar soil test levels are grouped together to allow the opportunity to use different fertilization rates within the same field. Recent developments in fertilizer application technology allow farmers to manage just about any size tract of land they wish. The number of management units within a field is limited by the intensity and cost of soil sampling, the management of additional soil test data, and the capabilities of variable rate application equipment. Today, by using computerized soil maps, an on-board navigation system and an on-board microprocessor in the cab the application equipment, varying rates/ratios of the fertilizer materials and agricultural chemicals can be applied to different portions of individual fields.

As the equipment moves across the field, the microprocessor "reads" the map to determine which soil area the applicator is in using the on-board navigation system then dispenses and blends the requested amount of individual products. Buchholz and Wollenhaupt (1990) reported the effects of site-specific management on an irrigated 80 acre corn field in southeastern Missouri. Although the county soil survey showed the field as one soil type, the farmer had experienced non-uniform crop yields. Grid sampling indicated a pattern of

widely differing nutrient levels. Fertilizer applications based on grid sampling produced substantial differences in P application. The prescription recommendations increased overall fertilizer costs but yields were increased 36 to 46 bu/A representing an increased income of \$7,000 from the 80 acre field.

This example demonstrates the progress that has been made through agricultural research in improving nutrient use efficiency, improving farmer profitability, and applying nutrients specifically where needed. The implications for environmental protection are obvious and provides evidence of the fact that economic and environmental goals are being met simultaneously without the imposition of further regulations or fees.

Yield Goals and Future Food Production

The need to establish realistic yield goals and to adjust nutrient availability and application to these production levels is a best management practice already advocated by the agriculture supply industry, private consultants, and Extension personnel (Goos and Prunty, 1990). Yield goals provide a target for increased production with the effects of lowered production costs per unit, improved overall farm profitability, and provide an incentive for improved management of all types including nutrient use efficiency.

Nutrient management plans and policies therefore should take into account the fact that over the long-term, more...not less...plant nutrients must be available to meet the demands of a growing population and a shrinking agricultural land base through higher yields. Every pound of food, feed and fiber produced in the U.S. and other countries requires a near constant amount of plant nutrients. Since crop production increases are the most likely scenario as world economies grow, populations increase and diets improve, then total nutrient needs from all sources will gradually increase to meet this demand.

Summary

Inputs necessary for required yield increases must be limited in terms of availability or cost by imposition of punitive taxes that are based on suppositions about environmental protection rather than sound scientific principles. Agricultural research has provided the scientific principles and best management practices for efficient production and environmental protection. Extension education and the educational efforts of the agricultural supply industries have resulted in the adoption and use of these BMPs with positive benefits for everyone.

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Table 1. Commercial nitrogen use in the U.S.

Years	Commercial Nitrogen Used Annually three-year average
1980-1982	11.4 million tons
1987-1991	10.9 million tons

Dahnke, 1991.

Table 2. Soil nitrate contents 10 years after break-out of North Dakota prairie

Depth in Feet	Nitrate-N lb/A/depth
0 -1	15
1-2	15
2-4	61
4-6	173
6-8	215
8-10	153
Total	632

Dahnke, 1991.

Table 3. Potential for replacing commercial nitrogen fertilizer with manure.

Region	Total Recoverable N from Animal Manure	Fertilizer N Used	Percent Manure N:Fert. N
	(000) tons	(000) tons	%
United States	1,900	10,350	18
Iowa	66	852	8
Pennsylvania	45	57	79

Note: The recoverable nitrogen from animal manure is based on the methodology described by Van Dyne and Gibertson and adjusted for 1987 animal numbers in the U.S.

PPI, 1992a.

FIGURE 1
1990 CROP NPK BALANCE

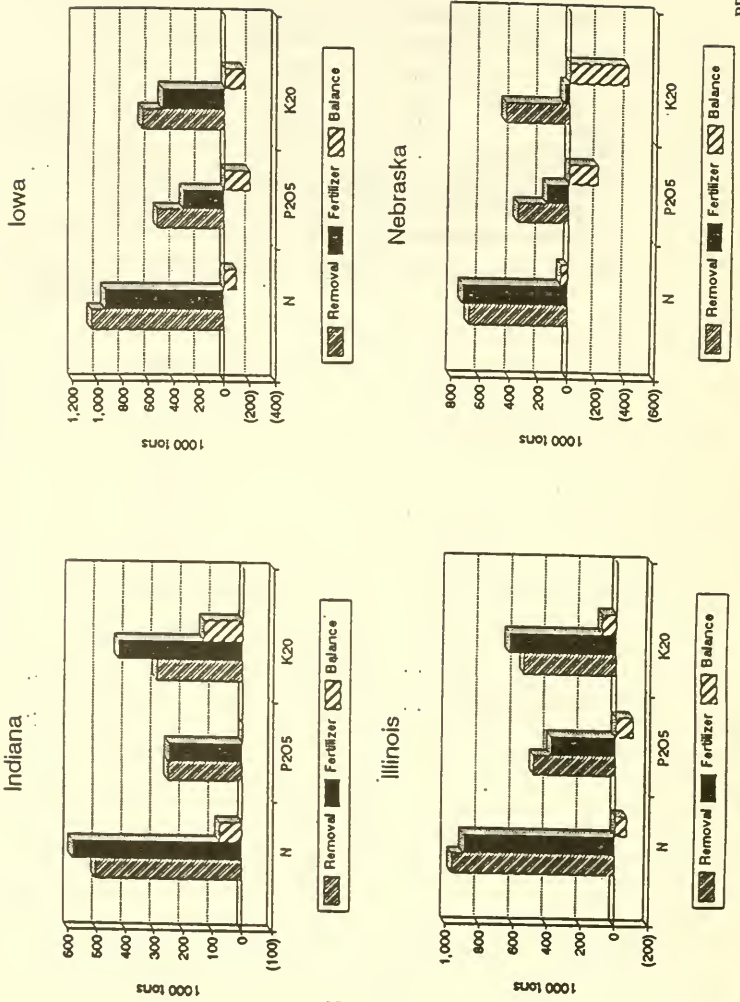
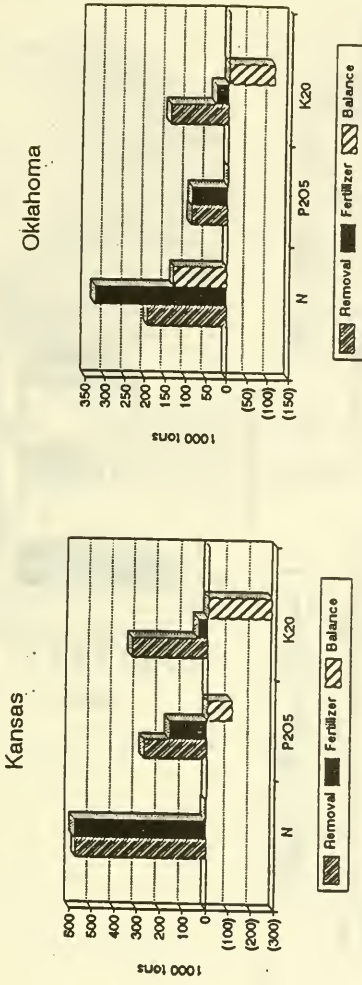


FIGURE 2
1990 CROP NPK BALANCE



Texas

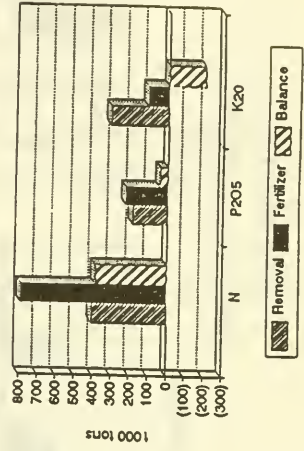
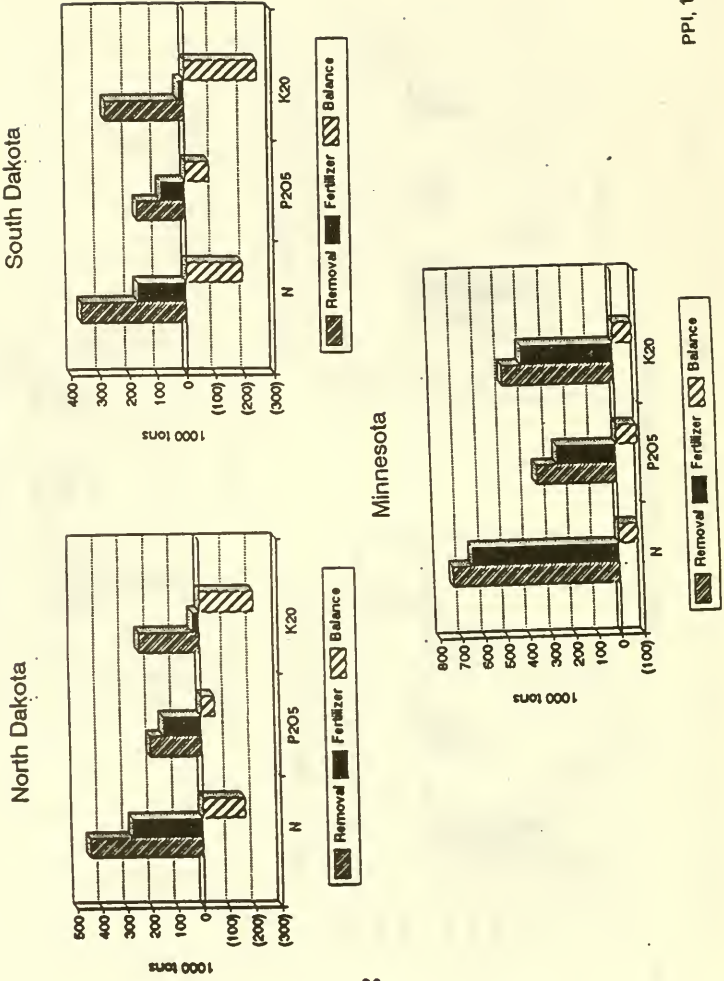


FIGURE 3
1990 CROP NPK BALANCE



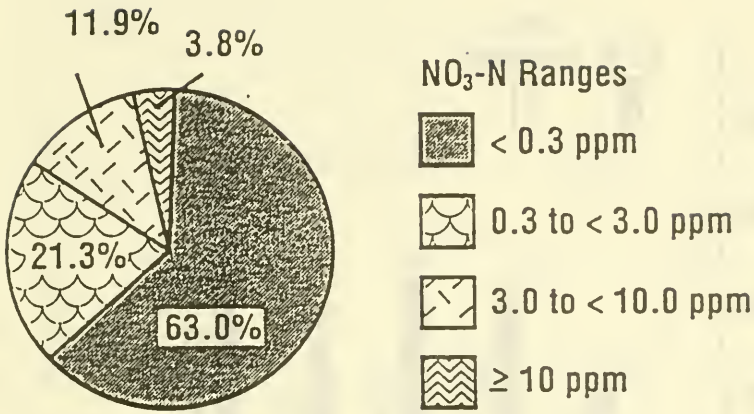


Figure 4. Distribution of NO₃-N concentrations in 33,753 private water supplies.

Baker, 1992

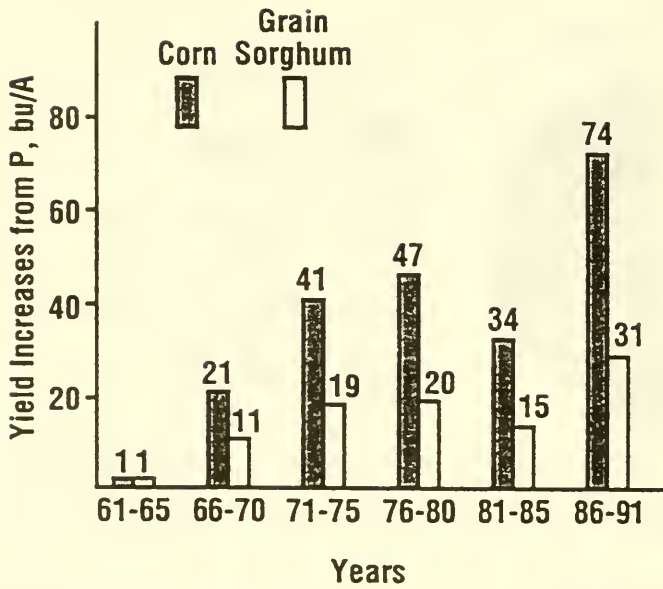


Figure 5. Irrigated corn and grain sorghum yield increases from fertilizer P have increased with time.

Schlegel and Dhuyvetter, 1992.

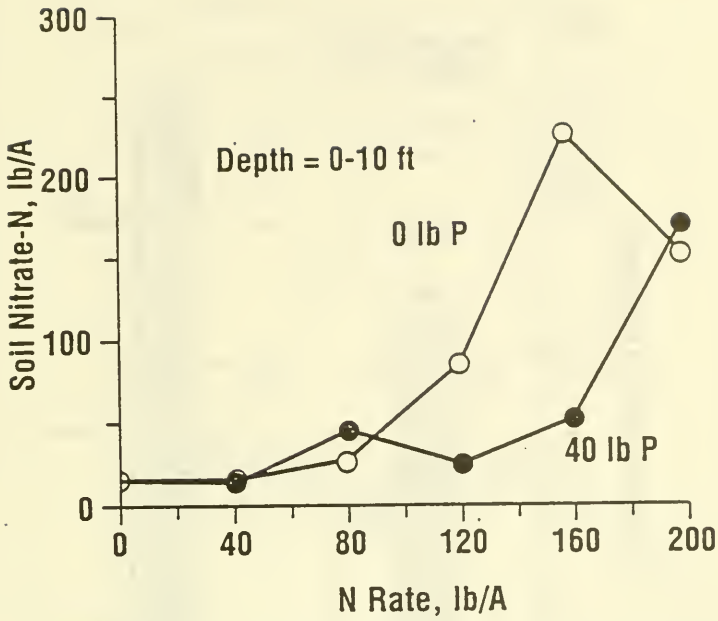


Figure 6. Nitrogen rate and P application effects on nitrate-N accumulation in the soil (corn, Kansas research).

Schlegel and Dhuyvetter, 1992.

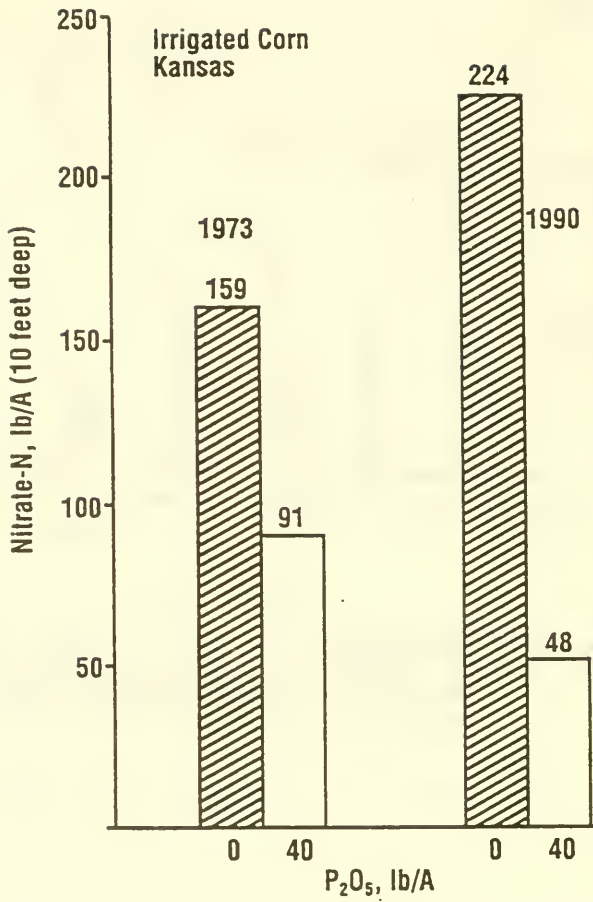


Figure 7. Soil nitrate accumulation to a depth of 10 feet has been dramatically controlled by the use of P fertilizer.

Schlegel and Dhuyvetter, 1992.

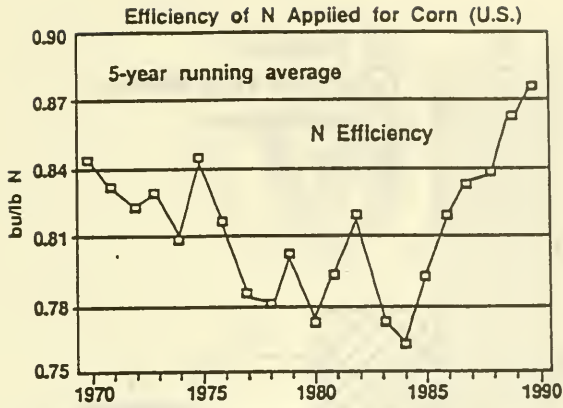
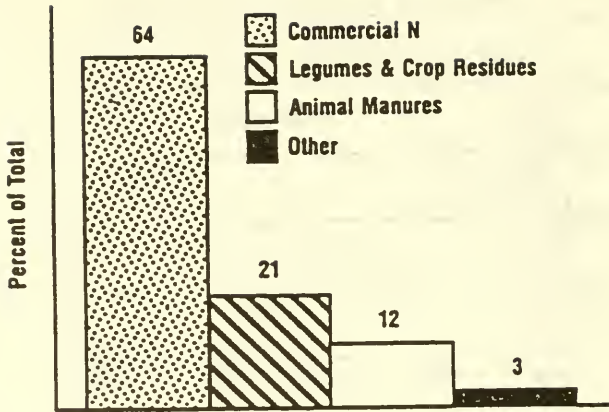


Figure 8. Bushels of corn produced per pound of N applied continues to increase...indicating improved efficiency. Yield was reduced in 1983 due to widespread drought.

Wallingford, 1991.



Percentages of total N applied to U.S. cropland by source (1989).

Figure 9. Note: Legumes convert atmospheric N to a crop-usable form through biological fixation. The "other" category includes precipitation, sewage and organic wastes. All values in this chart are estimated.

PPI, 1992a.



**STATEMENT OF
MICHAEL HOOKER
PRESIDENT, UNIVERSITY OF MASSACHUSETTS**

FOR THE

**SUBCOMMITTEE ON ENVIRONMENT AND NATURAL RESOURCES
U.S. HOUSE COMMITTEE ON MERCHANT MARINE AND FISHERIES**

CONCERNING THE

**ESTABLISHMENT OF A NATIONAL PROGRAM TO PROMOTE
THE EXPORT OF U.S. ENVIRONMENTAL PRODUCTS AND SERVICES**

FEBRUARY 25, 1993

I am pleased to submit the following statement as part of the hearing record of your Subcommittee on the proposal to create a national program to promote the export of U.S. environmental products and services. I believe that it is necessary and desirable that the private envirotech industry, federal and state governments, public and private institutions of higher education, and research institutes cooperate to develop markets abroad for U.S. environmental technologies, goods, and services. Such a cooperative, public-private program can achieve two linked goals -- (1) substantial growth for the U.S. economy by increasing envirotech exports and (2) improvement in the global capacity to manage the world's resources for sustainable development. I believe that these dual goals of the Clinton-Gore Administration will be well-served by adopting the proposals outlined in Chairman Studds' letter of invitation. As President of the University of Massachusetts, I believe strongly that public institutions of higher education should play a critical role in strengthening local, state, regional, and national economies. These institutions possess enormous human, cultural and technological resources that should be fully deployed in the public interest, including economic development. To fulfill this role, it is imperative that institutions such as the University of Massachusetts cooperate effectively with private industry and government agencies. I believe that the legislation proposed for consideration by Chairman Studds and the Subcommittee would, if adopted, create the kind of public-private mechanism we require to make more effective use of our substantial and diverse resources to achieve environmentally responsible economic development.

Growing global demand for environmental products and services

Estimates of current and future global demand for environmental products and services indicate that there are substantial opportunities for export growth. According to the U.S. Congressional Office of Technology Assessment, the global market for environmental products and services stands at approximately \$200 billion. The Organization for Economic Cooperation and Development has projected that this market will grow to \$300 billion by the year 2000. The estimates of the U.S. Environmental Business Journal (EBJ) range even higher -- a current global market of \$270 billion,

increasing to \$408 billion by 1996. According to the EBJ, the U.S. share of the world market is about 44%. The EBJ projects that the U.S. share of the future global market will likely decline to 40%, while western Europe's share will increase from 30 to 32%. EBJ attributes this decline in part to the slower rates of growth of mature industries, such as the U.S. envirotech industry. However, to prevent an even greater loss of global market share, and perhaps to reverse this trend, I believe that the U.S. must adopt an effective export market strategy involving the participation of industry, government, and public and private institutions.

How institutions of higher education can assist the envirotech industry

Clearly universities possess extraordinary human and institutional resources to support local, regional, and national economic development. Through its education, research, and service activities, a university can train future employees in a wide range of relevant disciplines, contribute to the development of new environmental control and management technologies, and provide advice and assistance by faculty and staff to meet industry's needs. The University of Massachusetts, and other institutions of higher education, make such contributions to economic development now. The task, however, is to organize the educational, research, and service activities of the University in a more effective, purposeful program of assistance to industry, government, and the public. This is the task that we have begun at the University of Massachusetts.

The University of Massachusetts has made economic development one of its principal strategic priorities for the 1990's. We are determined that the University will be a high quality and highly responsive knowledge-based economic resource for the citizens, key industries and diverse regions of the state. Our work with the New England Environmental Business Council (EBC) is one example. Four of the University's campuses are members of the EBC and Chancellor Sherry Penney of the Boston Campus is a member of the EBC Board of Directors. Faculty and staff have participated in the activities of EBC committees and have advised and assisted EBC in specific projects (e.g., EBC's initiative to

develop cooperative programs with Mexican industry) and in organizational work (e.g., EBC's effort to establish a national envirotech industry organization). At the request of the EBC, the Boston Campus has established an environmental management specialty in its MBA Program. This new program will be developed with advice from the industry to ensure that its needs are adequately addressed.

Looking to the future, the University has committed itself to developing a comprehensive strategy that will link the educational, research and service activities of our five-campus system to the business needs and opportunities of the envirotech business cluster. We look forward to working with the EBC in jointly developing this strategy.

Organizing the U.S. envirotech industry and the role of the federal government

I believe that the leadership of the Environmental Business Council has made a compelling argument for the need to establish a national organization for the envirotech industry to promote the export of U.S. environmental products and services. One of the strongest arguments for a national organization and an indication of its likely success is EBC's performance since it was created in December 1990. Currently EBC has almost two hundred member companies and institutions, including many leading envirotech businesses and industries in New England and both public and private universities. EBC has sponsored a well-attended series of meetings and conferences in Massachusetts around important topics related to export promotion. Representatives of state and federal agencies and international organizations participate in these events. Small and medium-size companies have particularly benefited from information and guidance on how to operate in international markets. EBC's Mexican initiative has been highly successful, leading to several exchange visits by EBC and Mexican industry delegations. Trade fairs have been held in Mexico, with significant participation by EBC member companies, and substantial contracts have been negotiated between Mexican and EBC companies (approximately \$100 million in contracts signed or under proposal to date). Furthermore, EBC and the Mexican industry representatives signed an agreement in December 1991 providing for cooperative projects to assist Mexican industry to implement a program of environmental management to

meet Mexico's stricter environmental legal standards. EBC is also cooperating with Canadian industry and government and already has several Canadian members. EBC has embarked upon similar projects in Eastern Europe, Russia, and the newly independent states.

The case for establishing a national envirotech organization to promote the export of environmental products and services is not difficult to make. It is a task that properly should be undertaken by the industry itself. As proposed by the EBC, a national organization would be established, with regional affiliates or chapters to be organized as soon as interest develops in a region. I anticipate that a national EBC, like the New England EBC, would engage in a broad program of activities to foster the involvement of U.S. envirotech companies in foreign markets. We at the University of Massachusetts have committed to being one of the founding members of the proposed Environmental Business Council of the United States

However, I believe that both the federal and state governments should be involved in a program to increase envirotech exports as an effective means to achieve both domestic economic growth and better global environmental and resource management. These are compatible goals and recognized as such by the Clinton-Gore Administration. Clearly federal and state agencies with environmental and economic development responsibilities, and with considerable resources and expertise in these areas can be involved more effectively than they are now in a cooperative, public-private effort to support the U.S. envirotech industry. Therefore, I strongly endorse the elements of the legislation under consideration by Chairman Studds and the Subcommittee.

(specific comments regarding each of these elements are provided on the following page)

Comments on Elements of the
Proposed National Environmental Technology and Business
Competitiveness Act of 1993

1. The need for a comprehensive statement of national policy --

I believe that a statement of the national policy to support the development of the U.S. envirotech industry and to promote the export of U.S. environmental products, goods, and services will substantially aid the Administration's effort to achieve economic development. Although the Export Enhancement Act of 1992 took a significant step in this direction, this Act does not include the envirotech industry and other important participants in an active partnership to promote exports. The proposed legislation can build upon what was achieved in the Export Enhancement Act.

2. Establishing the Office of Environmental Technology and Business Competitiveness --

Creating an office in the Department of Commerce to coordinate the Department's activities in promoting the export of environmental products, services, and technologies will simplify a complicated maze of different offices and agencies with partial responsibilities and authority in this area. Many agencies, including DOC, US AID, the Department of State, and the EX-IM Bank, share authority over the federal government's programs which would support the new program. Because the new program directly concerns the responsibilities of the Department of Commerce, I support the proposal to locate the new office in DOC.

3. Developing a national strategy to promote envirotech exports --

I support the recommendation by the EBC that the envirotech industry be a major player in the development of a national strategy to achieve the goals of the proposed legislation. I also recommend that institutions of higher education play an important role in developing this strategy. The plan to develop the national strategy must provide for an active partnership between government, academia and the private sector, and it must include a process to revise and update the strategy from time to time.

4. Authorizing the American Business Centers Program --

The Freedom Support Act (FS) authorizes the establishment of American Business Centers (ABCs) in Russia and the newly independent states. Under the FS, ABCs may be established in certain key locations to support the activities of U.S. business. I endorse the proposal that the ABC Program be strengthened and that DOC take the lead in operating such centers. businesses, including envirotech business.

5. The International Environmental Business and Technology Institute --

I support the proposal to establish the International Environmental Business and Technology Institute as a mechanism to coordinate the activities of the public and private sectors to promote the export of environmental products and services. I think that institutions of higher education can effectively support the work of such an Institute, and that certain institutions including the University of Massachusetts would be particularly interested in contributing to this effort. As the Committee develops its plans for the legislation, I will be willing to assist in devising suitable methods for the University and other institutions to play a constructive role.

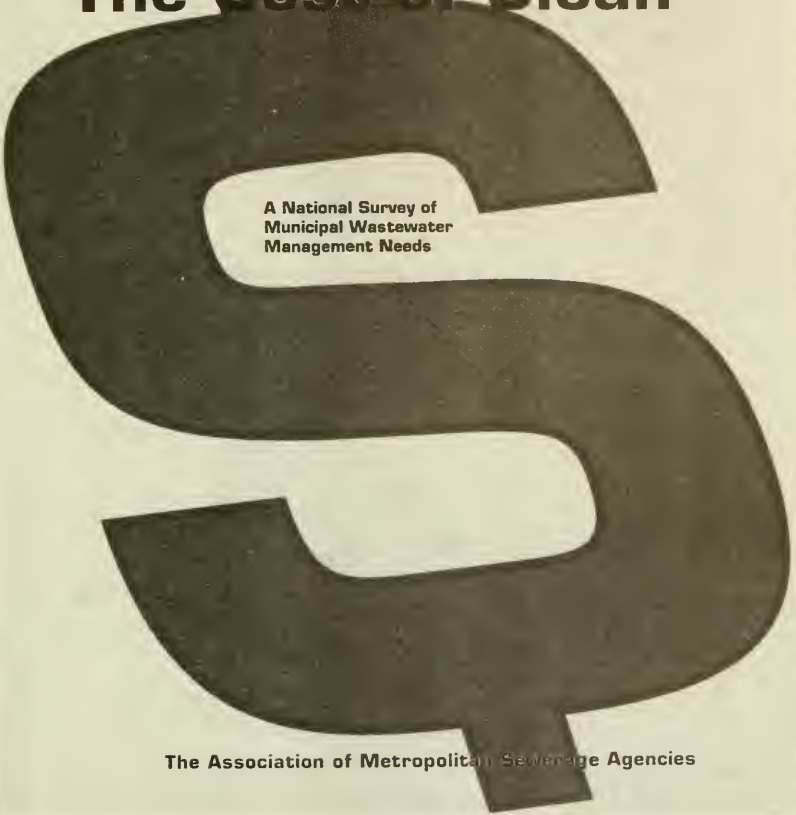
6. The Volunteer Environmental Services Corps --

The proposal to establish the Volunteer Environmental Services Corps is a powerful idea, combining both the expertise and spirit of altruism of environmental professionals in an effort to bring improved environmental management to Russia, the emerging republics of the former Soviet Union, and developing countries generally. Such volunteer professionals could work with their counterparts in these countries, offering advice and assistance on effective and efficient environmental management of businesses and resources. The clear model for this program is the Peace Corps, although volunteer senior environmental specialists would presumably work more closely with officials in government and business than at the local level. I strongly support this proposal.

7. NAFTA-related agreements -

A national EBC, in view of its current involvement with Mexican industry in several projects to improve environmental management in Mexico, could be an important factor in any additional agreements negotiated between the U.S., Mexico, and Canada to implement NAFTA. It would be in keeping with the intent of NAFTA that a national EBC, or the proposed Institute, would assist Mexico in achieving acceptable standards of environmental controls and management.

The Cost of Clean



**A National Survey of
Municipal Wastewater
Management Needs**

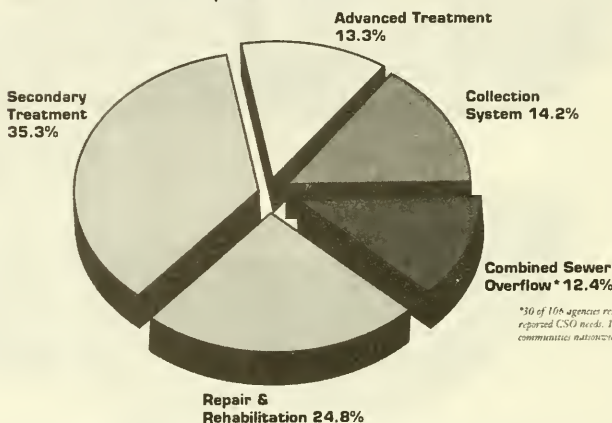
The Association of Metropolitan Sewerage Agencies

Skyrocketing sewer costs pose financial hardships

This report, and many others recently published, documents the fact that our water pollution control needs, as a nation, are considerable — in fact some may call them “mind-boggling.” Emerging needs such as combined sewer overflows, stormwater management, nutrient control, and nonpoint source controls will clearly require additional funds.

The reality of the situation is that environmental mandates have increased in both their number and cost, and Federal financial support of the nation's clean water program has diminished. As a result, the nation's ratepayers have been asked time and time again, to pay an increasing share of this financial burden. Without a doubt, the price tag for ongoing water quality needs will continue to escalate. The question we must address as a Nation is who will pay “The Cost of Clean.”

Capital Needs 1990-1995 \$22.6 Billion



*30 of 104 agencies responding reported CSO needs; 1100 communities nationwide have CSOs.

• Capital needs for the 1990-1995 period totaled \$22.6 billion. The total documented needs represent committed projects, projects underway, and projects scheduled to begin during this period. Needs in the areas of inflow and infiltration and stormwater management are included in the Collection System category, while air quality needs are reflected in Advanced Treatment. Rehabilitation costs reflect a growing emphasis on the repair and replacement of existing treatment systems, many of which were built in the early years of the Clean Water Act. This trend is expected to continue for years to come.

Annual Operation & Maintenance Expenses* For 144 AMSA Member Agencies

*1983, 1987, and 1999, AMSA Financial Survey



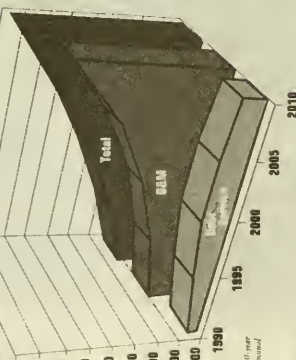
* Operation & Maintenance (O&M) costs, traditionally make up a higher percentage of a local agency's budget than capital costs. As new technologies are applied to meet more stringent requirements, the costs associated with operation & maintenance increase. Based on past surveys, we can project that O&M expenses will double every 8 years, with increases between 9% and 11% per year. These costs are paid for totally by local communities.

Projected Needs to 2010

Projected Revenue Required (in Billions)

O&M	\$ 4.84
Debt Service*	\$ 1.74
Total	\$ 6.58
O&M	\$ 7.86
Debt Service*	\$ 4.80
Total	\$12.66
O&M	\$12.78
Debt Service*	\$11.93
Total	\$24.71
O&M	\$20.77
Debt Service*	\$ 6.59
Total	\$27.36
O&M	\$33.75
Debt Service*	\$17.47
Total	\$51.22

*Based on a 20 year
bond at 7% annual
interest rate

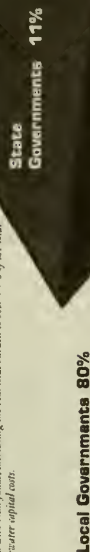


* Projections of debt service and operation & maintenance needs for the 1990-2010 period indicate that high costs will not diminish in the future. AMSA's Total Survey results focus only on costs associated with compliance with existing requirements. As communities face new environmental mandates, the cost burden will continue to escalate.

Funding Capital Needs: Who Pays?

* Of the current \$22.6 billion 1990-1995 capital needs only \$1.8 billion, or 8% of the total needed, is expected to be financed by Federal assistance. Currently, local governments, through rates and taxes, carry 80% or more of the capital burden — in addition to 100% of the steeply increasing operation, maintenance and replacement costs.

The 11% projected State funding includes State Revolving Loans which are ultimately repaid with local funds, increasing the real local burden to over 91% of the total, exclusive capital costs.



Projected Annual Household User Fees



* Annual household user fees are not doubling every six years. They are projected to rise at an even greater rate in the future due to increased local funding of capital projects, increased operation & maintenance costs associated with higher levels of treatment and newly mandated environmental programs. The issue of increasing user fees for higher quality services as rate increases impact the users, especially those on fixed or limited income.

Cleaner environment does not come free of charge

The Arizona Republic
March 8, 1992

Headlines from across the nation decry both the need for environmental protection and the desire to control costs. In recent years, local governments — and in turn their citizens — have paid an ever increasing share of "The Cost of Clean".

The Clean Water Act's historic focus on technology-based standards and end-of-pipe treatment, framed by aggressive schedules for compliance, and supported by significant Federal funding, has achieved enormous reductions in pollutants discharged to our nation's waters. The success we have experienced required each of these elements, and would have been impossible without one in particular — the significant Federal support provided through the Construction Grants Program.

The fact is, the Grants Program worked. Federal, state and local monies provided the impetus to improve and protect our nation's waters. And, as a result, much has been accomplished.

Today our focus must shift to a more comprehensive approach, addressing the control of more complex and diverse sources of pollution. One thing, however,

must not change. Continued Federal funding of projects mandated by the Clean Water Act — within the context of a balanced Federal/State/Local partnership — is critical to the ultimate achievement of national water quality goals.

As we narrow our sights on remaining pollution problems, ratepayers must not be forced to bear this burden alone. The

nonsewered population also realizes the benefits of clean water. And while large populations located in

major metropolitan areas provide a considerable financial base, they also include large numbers of low income, and poverty level residents who would find significant additional rate increases unbearable.

The Federal government shares in this financial responsibility. Our job is not done, and Congress has an important and continuing role in this process. As long as significant environmental improvements are federally-mandated, the Federal commitment to funding assistance must continue.

Compelling national interests, not only environmental and public health, but economic, social and political, make necessary an aggressive and comprehensive effort to preserve existing water resources and restore polluted waterbodies and basic infrastructure as rapidly as possible. This massive task means that we must intelligently and successfully target our clean water resources to give priority to the most serious problems and identify where we get the most environmental benefit for the least cost. Consequently, we must use the reauthorization of the Clean Water Act to establish processes that will give the country an integrated and comprehensive strategy that establishes new priorities for achieving clean water goals.

A new Clean Water Act must target point and nonpoint sources. It must encourage innovative multi-media strategies as an indispensable component of clean water planning.

Finally, it must consider not only our hopes and dreams for the future, but also the realities of funding needs and availability, and the constraints that limited funding will impose on the pace we can maintain.

Sewer rates to jump

Wisconsin State Journal
December 3, 1991

LEGISLATION MAY INCREASE COSTS

The New York Times & *Los Angeles Daily Times*
Sept. 13, 1991

Sewer fee hike headed for city

The Sun Press
January 31, 1991



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 202/842-AMSA



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A report of the Association of Metropolitan Sewerage Agencies, a national organization representing nearly 150 urban and suburban wastewater treatment agencies. For additional copies of the report, copies of AMSA's 1990 Wastewater Treatment Agencies Financial Survey, or additional background data, please contact AMSA.

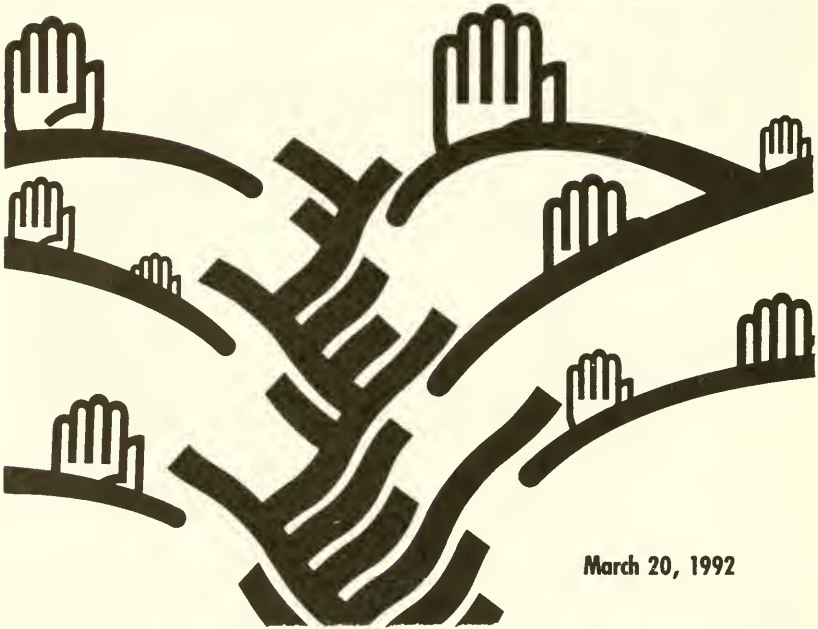
6/92

A Report on Clean Water Investment and Job Creation



**Prepared for:
National Utility
Contractors Association**

**Prepared by:
Apogee Research, Inc.**



March 20, 1992

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CLEAN WATER INVESTMENT AND JOB CREATION EXECUTIVE SUMMARY

This report summarizes the job creation effects associated with investment in clean water facilities. Every \$1 billion investment in water and sewer projects generates as many as 57,400 jobs, a figure somewhat greater than the number of jobs generated by public works investment in general.

Water and sewer capital stock is an indispensable component of our national infrastructure because clean water is essential to life as well as to the standard of living. Without clean water, human health and environmental integrity deteriorate, the economy cannot flourish, and the ability to compete is inhibited. Clean water investment must be a national priority.

The lasting economic benefits of clean water investment have been demonstrated. Water and sewer facilities preserve national wealth through the removal of contaminants from a vital natural resource. Furthermore, water and sewer facilities bring forth higher private sector profits, act to spur additional private investment in plant and equipment, and work to improve growth in labor productivity. Public investment in these facilities pays for itself through the creation of a larger tax base. This report centers on the fact that clean water facilities also generate considerable employment opportunities.

A number of public works studies have been published on the subject of job creation. These studies are analyzed in this report in order to estimate the current number of direct, indirect, and induced jobs associated with water and sewer facility investment. The total number of jobs generated per \$1 billion (1991 dollars) in water and sewer projects is at least 34,200 and could be as high as 57,400. The magnitude of this range is particularly significant in light of the nation's massive, documented clean water facility needs. For example, the United States Environmental Protection Agency recently estimated the total 20-year design needs for publicly owned wastewater treatment facilities at \$111.5 billion (\$1991) -- needs which represent 3,814,468 to 6,402,060 jobs for American workers. Finally, existing research indicates that the job creation effects may be more extensive for water and wastewater investment than for most other areas of public works, though all provide significant economic benefits.

In conclusion, the employment ramifications of clean water investment substantially increase the value of a national priority that is wholly justifiable on other economic, public health, and environmental merits.

CLEAN WATER INVESTMENT AND JOB CREATION

INTRODUCTION

In recent years, a great deal of attention has been focused on infrastructure investment needs. Construction, rehabilitation and maintenance of important water and sewer projects, also known as environmental infrastructure, have been postponed in a number of instances, resulting in deteriorating conditions in our nation's clean water capital stock. At the same time, demand for environmental infrastructure has outstripped existing capacity. The problem is compounded by government initiatives, such as the Clean Water Act, which mandate new and improved facilities.

In a 1990 study commissioned by the Clean Water Council,¹ Apogee Research estimated that the total investment required to meet drinking water capital needs for the period 1993-2000 could be \$51.9 billion (\$1991), including \$7.3 billion (\$1991) to satisfy new regulations. Given past trends in investment, it was estimated that needs during this eight year period could exceed planned outlays by \$18.2 billion for drinking water capital. The shortfall in wastewater capital is expected to be even more dramatic, with total needs, including replacement of older capital, expected to total as much as \$124.9 billion (\$1991). Based upon past trends and investment, the estimated national shortfall could be as high as \$65.7 billion aggregated over the same eight year period. The combined drinking water and wastewater treatment shortfall could therefore reach \$83.8 billion (\$1991) for the 1993-2000 period. This shortfall is only a rough estimate because projected capital needs, as well as projected outlays, could turn out to be substantially higher or lower. More recently, the US EPA estimates total 20-year design needs for publicly owned wastewater treatment facilities at \$111.5 billion (\$1991). Other studies demonstrate higher needs.

Addressing the documented needs in environmental infrastructure is important in terms of public health, a point made painfully clear by the recent cholera outbreak in South America and beach closings in San Diego, CA. Environmental infrastructure also plays a key role in economic well-being -- enhancing private sector productivity and increasing private profitability, thus supporting and stimulating private investment in new facilities and equipment as well as increasing public tax revenues.² In fact, a one time \$2.5 billion investment in water and wastewater facilities (1% of the net stock of clean water capital as of the end of 1989) is self-financing in the space of less than a decade.³

¹ Apogee Research, *America's Environmental Infrastructure: A Water and Wastewater Investment Study*, Clean Water Council (December 1990).

² See works by David Aschauer, including Chapter II "Effects of Investments in Water and Wastewater Infrastructure on Economic Growth" in *America's Environmental Infrastructure*, *op. cit.*

³ See page 23 in *America's Environmental Infrastructure*, *op. cit.* This pay back period assumes a annual depreciation rate of 2.5%, an annual maintenance investment of \$.062 billion, an average tax rate of 15%, and a discount rate of 10%.

The purpose of this report is to demonstrate that investment in water and wastewater facilities generates a considerable number of construction and non-construction jobs. The job-creation benefit can be put to greatest advantage when aggressive government intervention is used to stimulate a sluggish economy.

This report prepared, by Apogee Research Inc., of Bethesda, Maryland, for the National Utility Contractors Association, summarizes the job creation effects associated with several types of public works expenditures with a focus on water and sewer projects. A number of existing studies were selected for review to gauge the anticipated job creation potential of public works investment. The primary objectives of the report are to:

- Help policy makers estimate the job creation potential of an expanded water and sewer investment program by establishing the relative magnitude of the jobs creation multiplier; and
- Help policy makers prioritize public works investment projects in terms of job creation effects by evaluating the differences among sectors in employment impacts.

All estimates presented in this report have been adjusted to account for inflation in construction costs from the study period to 1991.

TERMINOLOGY

New infrastructure investment engages more than the on-site labor and capital used to construct water and wastewater projects. First, any project must be supported by materials purchased from other sectors. Second, the labor used in construction and in supporting sectors receives income that, in turn, is spent on a variety of goods and services, thus stimulating other areas of the economy not even remotely related to the investment project at hand. That is, new investment generates employment at three levels:

- **Direct:** Direct employment effects result from initial outlays in the construction sector and include all labor directly involved in planning and building the project. Employment effects basically coincide with the construction phase of the project.

Direct employment opportunities are likely to be filled by local labor markets close to the project. Professions and trades which stem directly from investment in environmental infrastructure include planning, engineering, bonding, legal services and insurance, manual labor, heavy equipment operation and other specialized construction skills, safety and supervision.

- **Indirect:** Indirect employment effects are generated by construction project purchases from other sectors to support investment activity and include incremental employment in supporting industries such as mining and raw materials production, transportation of materials and labor, equipment manufacture, supply and maintenance, communications -- additional employment created to generate the services and products needed to support construction of the project. Indirect

employment could also include provision of temporary housing or other support for labor temporarily relocated to work on a specific project.

Like direct employment, indirect employment effects are created shortly after the investment project is initiated. However, indirect employment can be more widely distributed, depending on where the industries producing the supporting goods and services are located. For example, a sewer project in one state may use pipes manufactured in another state, thus investment in a sewer project generates indirect employment benefits in that other state.

- **Induced:** Induced employment is part of the multiplier effect inherent in a complex economy with specialization in the provision of goods and services. Because we depend on each other to satisfy our economic needs, every increase in employment and income in one sector is translated into demand for goods and hence employment supplied from other, totally unrelated, sectors. Thus induced employment from investment in public works includes the employment effects in the rest of the economy traceable to the initial project investment; these are stimulated by increased household expenditures of families benefitting from direct and indirect employment effects.

In general, induced employment will trail direct and indirect employment. The length of the lag depends partially on how fast the consumption spending occurs and partially on the supply of labor and materials. Induced employment is most widely dispersed of the three effects since it is not confined to locally-provided needs but also includes goods and services that are "imported" from other regions to address household demands. These can include employment in such diverse sectors as processed foods, recreational equipment, vehicles, travel, household durables (refrigerators and washing machines, for example) -- that have no direct engineering connection to the initial investment stimulant.

Induced employment can also include the new employment generated in industries attracted to an area by the improved infrastructure, which increases accessibility to materials, markets, and labor or otherwise reduces costs of production. That is, this category encompasses employment due to existence of the new infrastructure rather than construction of the new infrastructure. For example, a newsprint manufacturer may choose to locate a new plant supplying southeastern newspapers in a certain region rather than elsewhere because the wastewater treatment plant just constructed there is better equipped to handle the volume and types of waste generated by the plant at a cost that will sustain the manufacturer's competitive position. Drawn by the infrastructure constructed in the area, this manufacturing establishment will generate new jobs for local labor -- an effect induced by the initial infrastructure investment.

JOB CREATION: SEWER AND WATER INFRASTRUCTURE

Estimates of job creation per \$billion of expenditure on selected sewer and water infrastructure projects are shown in Table 1. Because of the variation among studies in their focus, the employment effects are not broken down the same way for all -- some estimate direct effects only, some present an aggregated figure encompassing all three effects. This somewhat restricts the ability to compare studies and derive general numerical conclusions; however, we can identify general patterns and magnitudes.

Although direct job generation generally can be predicted with greater accuracy than indirect and induced, there is still a significant variation among studies in their estimates of direct employment effects for investment in water and sewer projects. Nonetheless, the magnitudes are similar and indicate that investment of \$1 billion in such infrastructure will generate between 6,400 and 15,600 jobs directly involved in project completion. Estimates of indirect effects vary widely among the three calculations presented, but could be as large as 13,600 jobs per \$billion (Bureau of Labor Statistics (1990)). Total effects, including direct, indirect, and induced, have been estimated at 34,200 jobs per \$billion (Bezdek & Hannon (1974)) to 57,400 jobs per \$billion (Vernez et al. (1977)). The estimated \$83.8 billion (\$1991) shortfall in funds for water and wastewater capital needs for the period 1993-2000 could represent 2,865,900 to 4,810,000 job-years of employment.

Differences among estimates can be explained in large measure by estimation methodology, different years of basic data possibly reflecting differences in inter-sectoral relationships (although all estimates were converted to \$1991), different capital intensities of individual projects, and -- in one case -- by the different geographical focus (regional rather than national).

For example, Sulvette and Thompson (1975) estimated that 7,300 direct jobs per \$1 billion dollars of expenditure would be created by construction of sewer lines while Vernez et al. (1977) estimated that the direct effects of sewer lines would be 14,500 jobs generated.⁴ For these two studies in particular, the discrepancies have been attributed to differences in the way the two studies transformed on-site labor requirements. Sulvette and Thompson divided total number of labor hours dedicated to a sewer line investment project by the average number of hours worked per year in all industries; they assumed that the average construction work-year was equivalent to the average work year in general. Vernez divided the total on-site earnings bill by the average annual wage in the construction industry alone. The latter better reflects the average number of hours worked per year in the construction industry (assuming wages on sewer projects are at the construction industry average), which is well below the average for all industries. Thus, in effect, Vernez converted a given number of labor hours per \$billion of investment into more work-years or "jobs" because they implicitly used the shorter average work year that characterizes the construction industry.

Separate estimates for indirect impacts are available for two studies only, due in part to an estimation methodology that precludes disaggregated estimates in the other studies. Deflating

⁴ These figures have been adjusted to reflect expenditure in 1991 dollars.

TABLE 1: JOBS GENERATED PER \$BILLION INVESTMENT IN SEWER, WASTEWATER
AND WATER INFRASTRUCTURE

STUDY	GEOGRAPHIC REGION	SECTOR(S)	JOBS GENERATED PER \$BILLION EXPENDITURE			
			DIRECT (A)	INDIRECT (B)	TOTAL (A+B)	TOTALS (A+B+INDUCED)
Office of Employment Projections, Bureau of Labor Statistics (1990)	National	New Water & Sewer	8,800	13,600	22,400	
Vernez et al. (1977)	National	Sewer Lines Sewer Plant	14,500 15,600	5,600	20,100	48,200-57,400
U.S. Army Engineer Institute for Water Resources, Analyzing the Economic Effects of Waterways and Ports	National	Sewer Works - Lines - Plants			15,800 16,000	
Bezddek & Hannon, (1974)	National	Water & Waste Water Treatment				34,200
Sulveste & Thompson (1975)	National	Water Lines Sewer Lines Water/Sewer System	6,400 7,300 12,300			
Massachusetts Water Resources Authority	Regional: Boston Harbor	New Sewer System				14,100*

* This represents only the effects received within the Boston Harbor regional area. These employment impacts are smaller than for national estimates since, due to leakages to other regions of the state and country, the full impact is not confined to the geographic areas immediately adjacent to the proposed investment.

the estimates to account for 1991 construction costs, data from Vernez et al. (1977) indicate that 5,600 indirect jobs would be generated per \$billion invested in sewer lines. The Bureau of Labor Statistics (BLS) determined that 13,600 indirect jobs would be generated by investment of a billion dollars in new sewer and water construction. The differences between the two estimates available may be explained to some degree by the methods used to calculate job effects. BLS tallies the jobs as a count of positions and does not differentiate between full-time and part-time workers. On the other hand, Vernez presents data in terms of full-time job equivalents, so two half-time jobs would be entered as one job created even if two different people were employed. Neither method is more correct than the other; each focuses on a different socio-economic aspect of job creation.

Direct and indirect effects (but excluding induced effects) presented in Table 1 range from almost 15,800 jobs (U.S. Army Institute) to more than 22,000 jobs (Bureau of Labor Statistics, 1990) per \$billion in a national context. Regional direct and indirect effects were estimated as somewhat over 14,000 jobs per \$billion in the Boston harbor area. Although the differences in methods, data, and analysis may account in part for the lower regional figure, regional impacts are expected to be less than national since there is always some degree of expenditure "leakage" from local areas to other areas of the country. That is, the national employment effect is the sum of all the regional effects, but regional analyses such as the Boston Harbor study tabulate only the effects captured within the study area. For example, a hiring increase at an equipment plant in Iowa made in response to increased wastewater investment in Massachusetts would not show up in the regional study.

Total job creation extends well beyond the direct and indirect employment effects. It is estimated that direct and indirect jobs represent less than half of the jobs generated by investment in sewer and water works. One study on sewer plant investment with disaggregated information on job creation, presented in Table 1, confirms the importance of induced effects. Vernez et al. (1977) estimated that total indirect and direct jobs only accounted for between 28 and 33 percent of all jobs generated; the remainder of the jobs generated are attributed to induced effects -- the result of increased consumption and investment expenditures triggered by increased demands from the direct and indirect job generation.

Estimates of the total number of jobs created nationwide -- direct, indirect, and induced - by \$1 billion invested in water and wastewater infrastructure range from 34,200 to 57,400.

COMPARISON WITH OTHER SECTORS

Job creation effects from investment in other public works sectors are similar to those from investment in water and wastewater. However, among the three studies containing data on both sewer/water and highway infrastructure, it is worth noting that the number of jobs generated directly by sewer and water infrastructure is somewhat greater than the number generated by highway construction.

Appendix I presents a tabular summary of all the studies reviewed for this report, including those from other public works sectors. As in Table 1 on environmental investments, these additional estimates have been adjusted to account for inflation in construction costs from

the study period to 1991. Although differences in data presentation among studies restricts our ability to compare estimates, we can nonetheless offer the following broad generalizations:

- Estimates of direct effects, when presented, are almost all in the range of 6,400-15,600 jobs per \$billion of investment (\$1991);
- Estimates of indirect plus direct employment effects, when presented, range more widely but are generally between 13,000 and 23,000 jobs per \$billion of investment; and
- When presented, estimates of total effects -- direct, indirect, and induced -- are all above 33,000 jobs per \$billion.

Direct job creation in the highway sector ranges from 7,700 (Bureau of Labor Statistics (1990)) to 10,700 (both Apogee (1991) and Vernez et al. (1977)). Some of the variation in the direct job generation estimates is due to varying methodologies among the models used for each study, for example, due to differences in the ways that job multipliers were developed.⁵

The national impact of direct and indirect effects combined was estimated to be from over 16,000 to 27,000 jobs per \$billion of investment in highways and roads, although the upper bound (DRI study, second year of two years) may use too broad a definition of indirect effects -- that is, the method of reporting is the source of variation because it includes jobs that others would classify as induced effects. DRI estimated that 22,000 jobs per \$billion of investment would be generated directly and indirectly in the first project year. The second year estimates include positive feedback of the initial first year outlays to all other sectors. Therefore, their estimate of 27,000 jobs per \$billion should fall -- as it does -- somewhere between the estimates for the total of direct and indirect job generation and the estimates of total direct, indirect, and induced jobs generated.

Adding induced effects to direct and indirect, several studies estimated total national employment effects of \$1 billion invested in highways and roads as 33,800 or greater jobs per \$billion (Bezdek and Hannon (1974), Wartle (1982), and Apogee (1990)).

The regional job multipliers for highway and road investments were lower than the national multipliers -- averaging approximately 10,000 jobs per \$billion dollars of investment for all three effects combined. The lower regional employment effect is due to expenditure "leakages" to other regions, particularly for induced effects -- the smaller the geographic region, the less that induced expenditures are satisfied from within the region. Moreover, since access to material inputs for construction may be limited in certain regions, indirect effects may be less in some regions than others. A simulated comparison study of \$10 million of highway construction in Nebraska and Pennsylvania exemplifies this result. Pennsylvania was found to be a more industrial economy and tended to produce more of the material inputs to construction

⁵ See Appendix II for a more detailed discussion of input-output analysis and multiplier development as well as a description of the more widely-used models.

than Nebraska with a less industrialized economy.⁶ Although some of the induced effects are not captured within the immediate region, they are still generated and contribute to employment and economic well-being elsewhere in the nation.

Comparing these data with those studies focusing on clean water infrastructure indicates that the job creation effects may be more extensive for investments in water and wastewater than in other areas such as highways and roads. In the studies that contained data on both types of projects, the differences in multiplier effects of investment in the two areas were as follows:

- BLS study: 8,800 and 13,600 of direct and indirect jobs respectively per \$billion investment in new water and sewer compared to 7,700 and 11, 800 per \$billion in new roads;
- Vernez et. al: 14,500 and 15,600 direct jobs in sewer lines and sewer plant respectively per \$billion compared to 10,700 direct jobs in highways or roads; and
- Sulvette & Thompson: 12,300 direct jobs for \$billion in water/sewer systems versus 8,600 for highways/roads, though only 6,400 and 7,300 per \$billion respectively for water and sewer lines alone.

SUMMARY

The studies reviewed for this report reflect positive impacts of public works investment. There are also indications from several studies that investment in clean water infrastructure has a greater jobs multiplier than investment in highways and roads. In general, for the data available, it is clear that direct employment effects are only a portion of the job generation potential of public works investments. That is, indirect effects are estimated to generate anywhere from half to double the amount of employment as direct effects, and induced effects - where comparisons are possible - boost the total effect to a multiple of the direct effects taken alone.

Investment of \$1 billion in public works would be expected to generate from 6,000 to as many as 15,600 jobs directly related to project construction. The permanence of these effects, of course, depends on continued expansion of the economy, but the "pump priming" effects of early initiation of contemplated investments in infrastructure is evident. Investment of \$1 billion would stimulate at least 34,200 direct, indirect, and induced jobs -- perhaps as great as 57,400 in sewer plant investment.

⁶ Benjamin Stevens, George Treyz, David Erlich, and James Bower, "State Input-Output models for Transportation Impact Analysis," RSRI Discussion Paper Series: No. 128, December, 1981.

APPENDIX I**SUMMARY TABLE OF JOB GENERATION EFFECTS**

SUMMARY TABLE: JOBS GENERATED PER \$BILLION INVESTMENT IN PUBLIC WORKS INFRASTRUCTURE

STUDY	GEOGRAPHIC REGION	SECTOR(S)	JOBS GENERATED PER \$BILLION EXPENDITURE			
			DIRECT (A)	INDIRECT (B)	TOTAL (A+B)	TOTAL (A+B+INDUCED)
Office of Employment Projections, Bureau of Labor Statistics (1990)	National	New Roads	7,700	11,800	19,400	
		New Communication	10,900	10,400	21,100	
		New Electric Utilities	11,100	12,200	23,300	
		New Water & Sewer	8,800	13,600	22,400	
		Gas Utility & Pipeline	8,600	12,900	21,500	
		Local Transit	6,100	12,700	18,800	
		Conservation and Development	8,300	13,600	21,900	
		Miscellaneous non-building	9,400	11,700	18,800	
		Maintenance & Repair	14,000	10,300	24,300	
		Highway	10,700*			41,600
Apogee Research, (1991)	National					
New Jersey Passaic Tunnel (Ben Stevens & Apogee Research, PC I.O)	State of New Jersey	Flood Control	6,800	7,700	14,500	
	Twelve-County Region	Flood Control	6,600	6,300	12,900	
Aviation Resource Partners	Regional: New England Regional: Massachusetts Regional: Suffolk Co.	Airport, Port, & Bridge Airport, Port, & Bridge Airport, Port, & Bridge			14,200* 11,500* 8,500*	
Massachusetts Water Resources Authority	Regional: Boston Harbor	New Sewer System				14,100*
Wisconsin Department of Transportation	Regional: Highway 29/45/10 Corridor	Highway				10,800*
Coalition of Northwestern Governors High Speed Rail Task Force	Regional: Northeastern States	High Speed Rail				10,200*

Delaware Valley Regional Planning Commission	Regional: Pennsylvania	Transit				11,000*
Indiana Department of Transportation	Regional: Indiana	Highway				9,400*
U.S. Army Engineer Institute for Water Resources, Analyzing the Economic Effects of Waterways and Ports	National	Sewer Works - Lines - Plants Civil Works Construction - Land - Dredging			15,800 16,000 14,600 15,400	
DBI Economic Benefits of Additional Transportation Project Spending	National	Highway (Year 1 of 2 years) Highway (Year 2 of 2 years)			22,000* 27,000*	
Wartle (1982)	National	New Highways and Streets				39,700
Bezdek & Hannon, (1974)	National	Highway Railroad and Mass Transit Educational Facilities Water & Wastewater Treatment				33,800 35,100 35,500 34,200
Silvestre & Thompson (1975)	National	Highways or Roads Water Lines Sewer Lines Water/Sewer System	8,600 6,400 7,300 12,300			
Venez et al. (1977)	National	Highways or Roads Sewer Lines Sewer Plant Flood Protection	10,700 14,500 15,600 24,100	5,600 5,600 5,200	16,300 20,100 29,300	48,200-57,400 67,500-97,500

* : Direct impacts here include construction only, all other impacts are considered indirect.

b : These refer to the effects within the region only; due to leakages, these are necessarily lower than the full national employment impact which will include the impacts distributed to other areas of the country.

c : The first year of this study incorporates the direct and indirect result of increased federal outlays. The second year of the study shows a stronger impact due to the combined effect of the direct effects of the outlays in the second calendar year and the positive feedback of the initial 1992 outlays on other sectors.

APPENDIX II
DESCRIPTION OF STUDIES REVIEWED

APPENDIX II

DESCRIPTION OF STUDIES REVIEWED

METHODS OF ANALYSIS

All of the results summarized in the table in Appendix I use some form of non-survey input-output analysis. The non-survey models that are most representative of the types of models/techniques used to obtain the results found in the summary table include:

- Bureau of Economic Analysis' Regional Input-Output Modeling System II, (RIMSII);
- Regional Science Research Institute's PC Input-Output regional impact model (This model was used in the highway study by Apogee, 1991, and to determine results in the New Jersey Passaic Tunnel study in Table 1);
- Bureau of Labor Statistics National Input-Output tables;
- United States Department of Agriculture's Micro IMPLAN (results of the Wartle, 1992, study come from a run of this model); and
- Regional Economics Models, Inc.'s economic-demographic forecasting and simulation model (Variations of this model were used for the studies conducted for Aviation Resource Partners, Massachusetts Water Resources, Wisconsin Department of Transportation, Coalition of Northwestern Governors High Speed Rail Task Force, Delaware Valley Regional Planning Commission, and the Indiana Department of Transportation, as seen in Appendix 1).

These models are not the only models available. With the advent of increased computer capabilities, the number of models is escalating. Most of the models listed above were originally developed with the 1977 national input-output table as the basis. Although there are other methods for determining multiplier effects, input-output analysis provides the analyst with a multiplier coupled with changes in employment, wages, and other measures used to define each sector within the region. In addition to the direct impacts a project will have on the region, the magnitude of the indirect and induced effects on each sector is important in public policy analysis. Input-output analysis provides an empirical tool for this type of analysis.

The use of national data within the input-output models presented in the summary table varies slightly between each study. This and other differences in model design and development result in differing measures and information available. The following is a more detailed summary of several input-output models currently being used for impact analysis. Several of these models are represented by studies summarized in Appendix I; a cross reference is provided within each

summary.

Within all of the input-output models discussed here, there are basically two types of multiplier information available:

- Type I multipliers that refer to the total effects of direct and indirect requirements; and
- Type II Multipliers that refer to direct, indirect, and induced impacts combined.

The RIMS II model supplies Type II multipliers whereas RSRI PC Input-Output and IMPLAN supplies the user with the option of applying Type I or Type II multipliers. With IMPLAN, there is a third option -- a Type III multiplier that compares direct, indirect, and induced effects to the direct effects generated by a change in final demand (direct+indirect+induced, all divided by direct). These Type III effects are different from the Type II effects and often found to be five to fifteen percent smaller than Type II multipliers.

With the exception of REMI, none of the models listed above is dynamic. Therefore, they provide only a projected snapshot of what might occur. However, each updates their one-period models by a technique of iteration or inversion or through the use of the Leontief inverse. Most of the models do not impose regional aggregation until after inversion or iterative procedures are completed. Furthermore, the level of aggregation is defined differently among models.

Variations within the models can further accentuate varying results. These variations include:

- Variations in data chosen to estimate labor coefficients.
- Variations in data sources to determine regional household income rows, consumption columns, and regional trade patterns.
- Variations in adjustments made to regional consumption patterns and final payments.
- Variations in adjustment for technological differences.
- Level of aggregation of multipliers, national or regional.

These modeling differences lead to variations in the estimation of regionalization procedures, implementing the household row and column, and determining regional employment. These variations, in turn, will most likely explain the variations among estimates of employment

generation.⁷ The following is a summary of several of the leading input-output (I-O) models available to users.

RIMS II

RIMS II was designed by the Bureau of Economic Analysis (BEA) to provide input-output type multipliers for one or more contiguous counties using industry disaggregated into approximately 500 sectors. They are currently based on the 1982 national input-output table. The RIMS II method for estimating I-O multipliers is a three step process:

- First, the producer portion of the national I-O table is made region specific by using a four-digit SIC mixed location quotient (LQ). The LQ's reflect the quantity of input requirements that are fulfilled by sectors within the region. The LQ's are based on two types of data: BEA's personal income data; and BEA's wage and salary data.
- Second, the household row, determined by the value added row of the national input output table, are made to reflect regional income losses due to individuals employed in the region but residing outside the region. And the household column, determined by the personal consumption column of the national input-output table, are adjusted for leakages that come from personal taxes and savings.
- Finally, the Leontief Inverse approach is used to estimate multipliers. This process of inversion produces output, earnings, and employment multipliers, which can be used to determine impacts of final demand on directly and indirectly affected sectors.

Since BEA has access to earnings and employment data that is undisclosed to most, the results of the model can produce relatively reliable results when compared to survey-based multiplier estimates. In addition, there are at least four clear advantages cited by the BEA that RIMS II has to offer:

- Accessibility to extensive data bases make it possible to estimate multipliers without extensive/expensive survey data for each region.
- The level of detail provided by RIMS II helps avoid aggregation errors that can occur when sectors are forced to be combined.

⁷ S. Brucker, S. Hastings, and W. Latham, III. "The Variation of Estimated Impacts From Five Regional Input-Output Models," *International Regional Science Review*, Vol 13, Nos. 1 & 2, 1990; pp. 119-139.

- RIMS II multipliers can be compared across regions because they are based on a consistent set of estimating procedures nationwide.
- RIMS II multipliers can be updated to reflect the most recent local area wage and salary and personal income data.

However, the use of the location quotient has been criticized.⁸ The LQ with the value of 1 implies that a region is completely self sufficient. This based on two factors:

- The consumption pattern of a region may vary from the national average.
- The industrial demand for goods and services will depend on the structure of the region and surrounding regions.
- Interregional crosshauling needs to be addressed more robustly.

REGIONAL SCIENCE RESEARCH INSTITUTE MODEL

The Regional Science Research Institute (RSRI) model uses regional purchase coefficients (RPC) to adjust the national input-output table to the region desired. An RPC for a good or service in a state is defined as the proportion of demand for that good or service that is fulfilled by that state rather than being imported from other states. A set of 502 RPCs, corresponding to 501 sectors of the technology matrix plus labor, is provided for each of the 48 states included in the input-output analysis.

Elements of the technology matrix express the dollars worth of each input per dollars worth of output. the technology coefficients are based on national input-output coefficients provided by the Bureau of Labor Statistics (BLS) or the Bureau of Economic Analysis (BEA) of the U.S. Department of Commerce. The technical coefficients aid in determining the change in demand for inputs by an industry associated with a change in employment or output in that industry.

The RPC addresses the issue of leakage of purchase of goods and service to other regions that result in payments for goods and services imported from other regions. These leakages can reduce the indirect effects on the economy of the region where the direct impacts are occurring. This leakage reduces the multiplier effects of the direct changes. RPC's identify the extent to which a region supplies its own inputs.

⁸ See Isard et al. and Stevens et al. for a more extensive and empirical look at the location quotient problems.

The RSRI PC I-O regional impact model supplies detailed sectors (515) plus tables of employment, wages, output, and value added aggregated to 1 and 2-digit SIC levels. It provides a full set of multipliers for each report. State, local, and federal tax effects as well as occupational-skill breakdowns are made based on BLS projected I-O tables.

The RPC method used by PC I-O should be more accurate than models using the location quotient methods, in part because this approach allows for crosshauling and the latter does not. Since crosshauling of the same good among regions is common, the PC I-O method provides better estimates of regional imports and exports.

The advantages of the RSRI PC I-O are found in its special features:

- Updating of wage/employee ratios to a user-selected "constant dollar" year.
- Adjustment of the I-O technology matrix, household consumption, and labor productivity to any year, 1982-2000, based on BLS projected U.S. I-O tables.
- Availability of optional translators used to convert complex activities such as tourism, cargo shipments, or airport activities, into specific sets of purchases from detailed economic sectors defined in the model.
- Lotus 123 facility is used to change regional data and alter, or add new sectors to, the I-O matrix.
- Region-specific household consumption coefficients based on 1988 BLS Consumer Expenditures Survey data; special handling of commutation and other income leakages out of a region.

BLS EMPLOYMENT REQUIREMENTS STUDIES

Every five years, the Bureau of Economic Analysis (BEA) of the Department of Commerce prepares the official input-output tables for the United States. These tables "provide a snapshot of all the transactions within the economy at a given point in time -- sales of products or industry (intermediate demand), as well as sales to final users (final demand or GNP)."⁹

The 1982 input-output study was released by the BEA in 1991. The model consists of employing a "use" table which is referred in other models as a transaction table. Each row of the use table show actual dollar amount of commodities purchased by various industries and final users in the year that the table is estimated. Each column of the use tables depicts the purchases of a specific industry of all the factors of production such as goods, services, and value added.

⁹ BLS internal paper, "Employment Requirements Studies."

The "make" table summarizes the production of commodities by industry. It shows the dollar values of production. Each row represents an industry; the value of production is shown for each commodity from that specific industry. The columns each represent a commodity and show which industries produce a specific good.

Micro IMPLAN

Micro IMPLAN determines Type I and Type II multipliers for the impacts of industry output, personal income, total income, value added, and employment. IMPLAN regionalizes the I-O transactions using a supply-demand pool approach. IMPLAN has an additional step that estimates induced effects.

The advantage of this model is that the user is able to access and supply sector definitions and regional data. Technical support is available to users.

REGIONAL ECONOMICS MODELS, INC. (REMI)

The standard REMI model is called the REMI EDFS-53 model which stands for Economic and Demographic Forecasting and Simulation Model. The number of industrial sectors can be as great as 53 or include only 14 major industries. The REMI models are available as single or linked multi-area models.

By linking a 466 sector I-O model to the EDFS, occupational forecasts can be generated. In the model, labor supply and demand influence wage rates; these affect the shares of the local and export markets served by local firms as well as income and migration. These factors all contribute to the determination of output and employment in a single set of simultaneously solved equations.

The set-up of the model allows the user to alter the model's forecasts by changing the specifications regarding policy variables and level of detail.

APPENDIX III

PERSONS CONTACTED AND OTHER REFERENCES

APPENDIX III

PERSONS CONTACTED AND OTHER REFERENCES

Many individuals knowledgeable in the relationship between infrastructure investment and job generation willingly shared information for the development of this summary. We found the following individuals most informative with respect to the modelling the investment and job generation:

- Ben Stevens of Regional Science Research Institute, RE: PC I-O
- George Treyz, President of Regional Economic Models, Inc., RE: REMI
- Tom Wartle, University of Nebraska, Department of Forestry, Fisheries and Wildlife, Nebraska Forest Service
- Dennis Robinson, Water Resources Support Center, U.S. Army Corps of Engineers
- Charles Bowman, Chief, Division of Industry Employment Projections, U.S. Dept. of Labor

Modelers and models not included but relevant to this topic are:

- William Schaffer, Georgia Institute of Technology, I-O Model
- Charles Lamphear, University of Nebraska, ADOTMATR
- Philip Bourque, University of Washington, Washington Input-Output Model
- Richard Conway, Jr., Washington Projection and Simulation Model
- Karen Polenske, MIT, MRIO

Other valuable sources of information include the staff of the Bureau of Economic Analysis, in particular Richard Beemiller and Carmen Piglar.

The Regional Research Institute in Morgantown, West Virginia. Prof. William Mierynk, Prof. Andrew Isserman, and Prof. Steve Fournay.

The IMPLAN Hotline at University of Minnesota: Wilber Maki and Doug Olson

Regional Economics Applications Laboratory, University of Illinois at Urbana-Champaign: Prof. Geoffrey Hewings.

NUCA AFFILIATED CHAPTERS

ARIZONA --

Underground Contractors Association of Arizona
Tucson Underground Contractors Association

CALIFORNIA --

Engineering and Utility Contractors Association
Engineering Contractors Association
Engineering and General Contractors Association

CONNECTICUT --

Utility Contractors Association of Connecticut

DELAWARE --

Delaware Utility and Transportation Contractors
Association, Inc.

FLORIDA --

Central Florida Utility Contractors Association
Southwest Florida Utility Contractors Association
Mid Florida Utility Contractors Association
Utility Contractors Association of North Florida
Underground Contractors Association of South Florida
Suncoast Utility Contractors Association

GEORGIA --

Georgia Utility Contractors Association

ILLINOIS --

Underground Contractors Association

INDIANA --

Indiana Constructors, Inc.

IOWA --

Iowa Utility Contractors Association

MARYLAND --

Associated Utility Contractors of Maryland
Public Works Contractors Association of Maryland, Inc.

MASSACHUSETTS --

Utility Contractors Association of New England

MICHIGAN --

Associated Underground Contractors, Inc.

MINNESOTA --

Minnesota Utility Contractors Association

MONTANA --

Montana Utility Contractors Association

NEW JERSEY --

Utility & Transportation Contractors Association of New
Jersey

NEW MEXICO --

Rio Grande Underground Contractors Association

NEW YORK --

Capitol Contractors and Excavators Association
Niagara Frontier Utility Contractors Association

NORTH CAROLINA --

North Carolina Utility Contractors Association

OHIO --

Ohio Contractors Association

PENNSYLVANIA --

Pennsylvania Utility Contractors Association

RHODE ISLAND --

Utility Contractors Association of Rhode Island

TENNESSEE --

Tennessee Utility Contractors Association

TEXAS --

Texas Utility Contractors Association

UTAH --

Intermountain Utility Contractors Association

VIRGINIA --

Heavy Construction Contractors Association
Richmond Area Municipal Contractors Association
Central & Southwest Virginia Utility Contractors
Association
Hampton Roads Utility & Heavy Contractors Association

WASHINGTON --

Utility Contractors Association of Washington

WEST VIRGINIA --

West Virginia Utility Contractors Association

WISCONSIN --

Wisconsin Underground Contractors' Association, Inc.

SANDERS INTERNATIONAL

Environmental Consultants

February 23, 1993

Congressman Gerry E. Studds
 Chairman, Committee on Merchant Marine and Fisheries
 U.S. House of Representatives
 Room 1334, Longworth House Office Building
 Washington D.C. 20515-6230

Dear Mr. Chairman:

On behalf of our colleagues at Sanders International, we appreciate your invitation to submit a statement for the record of a hearing on the question of establishing a national program to promote exports of U.S. environmental technologies, goods and services.

Sanders International, Inc. is a small consulting and venture promotion firm that specializes in environmental business. In addition to our work with private clients, we are currently the contractor for the Environmental Component of the Capital Development Initiative (CDI). The CDI is an AID-financed program to promote U.S. investment in environmental infrastructure in Central and Eastern Europe. The following comments are heavily influenced by our work directly with U.S. companies and our experience under the CDI contract.

As a general proposition, U.S. suppliers of environmental services, goods and technologies face many impediments in entering foreign markets, especially in poorer and transitioning economies. Current U.S. Government promotion programs are only partially effective in addressing these impediments. A major rethinking and reorientation will be required if the Government is to play a maximally effective role in helping the U.S. environmental industry expand abroad. In addition to the specific proposals contained in your concept paper, we would suggest at least five other initiatives for consideration in the proposed national strategy for the promotion of envirotech exports:

- (1) Linking policy and promotion programs. Current promotion programs for environmental goods, services and technologies are not closely linked with technical assistance programs to help countries develop their environmental policies. In many instances, the potential market for a particular technology depends on changes in local laws or regulatory regimes. For example, low cost, appropriate technologies where the United States is a market leader, such as naturally enhanced wastewater treatment, burning hazardous waste in cement kilns, or disposing of saline mine wastewater or drilling wastes through deep reinjection, often cannot be exploited because of

local laws, regulations or enforcement practices. Conversely, regulators in those countries face difficulties in setting appropriate environmental standards when they are not aware of the full spectrum of technologies available or if the companies with the technologies are unwilling or unable to enter the local markets because of regulatory uncertainties.

It will be important to find ways to enable the promotion agencies (e.g., Commerce or OPIC) to coordinate more closely with the agencies providing technical assistance (e.g., AID or EPA) in order to (a) open market opportunities for U.S. technologies or approaches which depend on new policies or regulations to be feasible and (b) enable regulators in those countries to operate with reasonable assurance that the full range of technological alternatives will be available to them.

- (2) The need for an interagency "institutional invention". The above mentioned need to link policy and promotion recognizes that a multitude of agencies have important roles to play in promoting U.S. environmental business in world markets. Wherever the lead responsibility for promoting the envirotech industry is placed, the involvement of many other agencies with necessary expertise and specific mandates will be required. And, if past experience is any guide, each will have its own agenda. There is an urgent need for a kind of "institutional invention" which will facilitate genuine interagency cooperation. Interagency cooperation is perhaps an oxymoron; but, failure to effect real coordination and cooperation among all involved organizations will result not only in duplication and confusion of effort, but also in the loss of potentially huge synergies. For example, the Department of Energy is spending tremendous amounts on developing clean coal technologies. However, other agencies charged with business development or environmental responsibilities are not systematically assisting in developing markets for U.S. clean coal businesses, even though there is no near term alternative to heavy reliance on coal in many developing economies.

Creating a new Under Secretary in Commerce for Environmental Technology and Competitiveness could provide a useful focus (although there will be justifiable reluctance to give this level of emphasis to just one industry sector). However, simply creating the Office will accomplish little unless procedures can be developed which would provide genuine incentives to all the relevant agencies to take a broader perspective and look for synergies beyond their parochial interests. It is important to develop realistic measures (such as perhaps earmarking substantial funds which could only be used for cooperative interagency initiatives) which would provide meaningful motivation for collaboration.

- (3) The need for technology authentication. Especially in the developing countries and the emerging economies of Central and Eastern Europe, there is understandable resistance to paying for technologies which have not yet been successfully applied in the local market. This is especially a problem for many of the low-cost, innovative technologies which typically have not even been widely accepted in the United States and are, therefore, especially suspect in the eyes of foreign buyers.

One approach which should be explored more fully would be to establish a government sponsored environmental "Good Housekeeping Seal of Approval" which would document or authenticate the performance of envirotech products or technologies in the United States. Such an approach would have to be strictly voluntary, use carefully-defined criteria, provide for due process, and would require careful planning to minimize the administrative costs for both the government and participating firms. Nonetheless, it would provide a real competitive edge to U.S. firms, and also benefit foreign buyers by reducing uncertainty and transactions costs in trying to verify the performance of U.S. suppliers.

- (4) Programs to match needs to resources. Throughout most of the developing countries and Central and Eastern Europe, projected needs for environmental protection far exceed potentially available resources. We have made rough calculations which suggest that funds from all sources (domestic and external, public and private) are likely to be less than 10-20 percent of the amounts required if the countries were to try to reach developed country standards over the next 10-15 years using current technologies and regulatory practices. This implies a tremendous shortfall in environmental achievement unless a fundamentally different strategy is followed than that being advocated by most government planners, aid donors, and environmental groups.

In our experience, the lack of financial resources in many countries requires that great care be taken to use cost-effective technologies and not to set standards higher than can realistically be achieved. These standards can then be raised over time as rapidly as possible given available resources (whereas prematurely stringent requirements risk diverting scarce resources into areas of diminishing returns and lowering overall environmental quality). In addition, outside advisors and policy makers in these countries should emphasize flexible and market based regulatory approaches which significantly reduce compliance costs. Systematic programs to develop and promote these appropriate technologies and approaches play to U.S. competitive strengths (especially those of innovative small companies) and will better position the American environmental industry to capture future business in the developing markets.

- (5) The need to fill some of the funding gaps. In the current environment of budgetary restraint it will be difficult to find new funds for envirotech promotion. Nonetheless, there are significant gaps in the programs currently available to finance environmental investments. The gaps are especially acute in most of the developing countries and in Central and Eastern Europe. The most important gaps are for equity capital for small U.S. companies and for project developers in the poorer nations, where the capital base is small to start with and where there is a great reluctance to make environmental investments which do not generate direct income. It is also frequently difficult to find funds for feasibility studies and project development activities. In addition, there is a serious gap between the funds available from venture capital sources and specialized environmental and regional funds (usually only able to lend in amounts under \$1 million) and the larger commercial and development lending institutions (which typically will not consider projects of under \$10 million).

A concerted strategy to promote the U.S. envirotech industry should entail shifting some funds from the programs of the larger donor entities to special purpose windows to increase the amounts of (a) equity capital available for environmental investments, (b) funds for project development, and (c) funds for mid-size projects (i.e., in the \$ 1-10 million range).

With respect to the specific proposals in the concept paper, there would be great merit in a comprehensive statement of national policy to promote the U.S. envirotech industry, especially if it addressed some of the broader issues of the type raised above.

It would certainly be desirable to create a focal point (although perhaps not necessarily at the Under Secretary level) to coordinate all relevant Commerce Department programs and to develop the national strategy paper.

The need for separate Environmental Business Centers is less clear since the requirement could presumably be met through existing Foreign Commercial Service offices if they were given better backstopping. The requirement for a separate International Environmental Business and Technology Institute is also not clear since one of the current problems facing U.S. environmental companies is the plethora of existing programs which are partially overlapping and duplicative. There is a serious risk that a new non-profit institute would just magnify this problem rather than provide valuable new information or services. Perhaps a better approach would be to use the \$5 million per year as a pot of money to encourage interagency collaboration on existing programs.

The idea of a Volunteer Environmental Services Corps has real appeal, although it might better be incorporated in existing Peace



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Corps programs. If the current Peace Corps structure is not sufficiently flexible to accommodate the environmental mission, the concept appears well worth additional study.

Additional tax incentives or low-cost loans would have to be very carefully targeted on real needs if they are not just going to subsidize activities that would be undertaken anyway. Perhaps one useful focus would be to encourage international commercialization of low-cost, innovative pollution prevention and abatement technologies that have not been widely adopted in the U.S. because of our higher standards and cost structure, but would help poorer countries meet their most urgent environmental needs within their limited financial availabilities. A modest U.S. program of grants, loans, and perhaps tax incentives could support technology authentication, feasibility studies, project development activities, and provide improved access to small scale equity capital and mid-size project finance.

Finally, efforts to require Mexico to purchase specified dollar amounts of U.S. goods and services would raise a host of problems that would appear to outweigh the potential benefits.

Thank you very much for the opportunity to comment on the concept paper. The issue of enhancing the competitive position of the U.S. environmental services and technology industry is vitally important not only for the U.S. economy but also for improving environmental conditions around the world. The Committee is to be commended for its leadership efforts in this area. We would be pleased to offer any additional comments or assistance that would be of help to you.

Sincerely,

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